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LECTURES ON EKZEMA

AND EKZEMATOUS AFFECTIONS.



LECTURES ON EKZEMA
AND EKZEMATOUS AFFECTIONS.

WITH
AN INTRODUCTION
ON THE GENERAL PATHOLOGY OF THE SKIN
AND
AN APPENDIX OF ESSAYS AND CASES.

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PREFACE.

THE LECTURES which form the chief matter of the accompanying pages were published in the JOURNAL OF CUTANEOUS MEDICINE; while the Essays and cases constituting the last chapter were partly published in the same journal and partly in other journals. Both subjects are now brought together in one volume, for convenience of reference and to illustrate more fully the views and opinions of the Author. The importance of the disease, EKZEMA, both in a social and in a scientific sense, is now universally recognized: in the former character it claims our most careful observation to master a knowledge of its nature and cure; and in the latter it deserves to be regarded as the keystone of Dermatology.

In addressing a learned and scientific profession the Author feels that there is no necessity for excusing the orthography of the word Ekzema which he has adopted. The word is Greek; the spelling is also Greek: and therefore he is doing no more than simply adopting the language of the fathers of medicine from whom the term has descended.



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EKZEMA AND EKZEMATOUS AFFECTIONS.

CHAPTER I.

ANATOMY, PHYSIOLOGY, PATHOLOGY, ETIOLOGY, AND THERAPEUTICS
OF THE SKIN ; AND PRINCIPLES OF CLASSIFICATION OF
CUTANEOUS DISEASES.

ANATOMY OF THE SKIN.

THE SKIN is the external surface membrane or integument of the body, as is the mucous membrane the internal integument. It is composed of two layers ; an internal layer, the *derma* ; and an external layer, the *epidermis*.

The DERMA, or CORIUM, may be regarded as an adaptation or modification of the surface tissues of the body to suit a particular purpose ; by its internal face it is continuous with the superficial subcutaneous or areolar tissue, while its external face has received the name of *limitary* or *basement membrane*, limitary, because it is the boundary of the vascular tissues ; and basement, because it constitutes the base on which the epidermis rests. The term "membrane" applied to the limitary and basement face of the derma, must be accepted with some reserve, as the presence of a separate layer has not been identified ; and the most simple idea that can be given of it is, to regard it as the limit of the special organization of the derma.

If we subject the derma to examination from its internal surface to its exterior, we find it at first presenting the structure of a coarse network, the *pars reticularis*, and the network becoming gradually finer and finer as we follow it outwards; nearer the external surface it resembles the tissue of a fine sponge; and most externally of all, it is transparent and homogeneous, or indistinctly fibrillated. Moreover, quite at the external surface it is raised into minute prolongations of its substance which are termed *papillæ*, and which, with the basis from which they arise, constitute collectively the *pars papillaris*.

A further examination of the external face of the derma exhibits not only papillary prominences, but also numerous perforations, which are the mouths of tubuli, stretching more or less deeply into the substance of the corium. The apertures of the perforations are the *pores* of the skin, and the tubuli its *follicles*; and the follicles are partly devoted to the formation and maintenance in position of the hairs, and partly to the excretion of the glandular products of the skin. Moreover, observation of the external face of the derma demonstrates to us the existence of two surfaces, one of which is apparent, namely, the *papillary surface*, and the other hidden or occult, namely, the *follicular and glandular surface*.

We may next inquire into the structural composition of the derma, which we shall find to consist of white fibrous or dense connective tissue, muscular tissue, vascular tissue, nervous tissue, fatty tissue, and loose and filamentary connective tissue. The most abundant of these is the white fibrous tissue, which is the chief constituent of the *pars reticularis*, enters largely into the composition of the stroma of the upper or areolar portion of the corium as well as of the *pars papillaris*, and is the material of construction of the *papillæ*. Mingled with the

white fibrous tissue is a considerable proportion of yellow fibrous or elastic tissue; and less abundantly than the latter, and in some situations more than in others, the unstriped muscular fibre or muscle of organic life. The latter is found in distinct bundles at the base of the areola of the nipple, in the scrotum, and in connection with the hairs, giving rise by its association with the latter, to those prominences of the pores of the skin which have suggested the term, *cutis anserina*, or goose skin.

The vessels of the skin enter into and make their exit from the structure of the corium through canals, of which the meshes of the *pars reticularis* are the apertures; in these canals they are associated with the nerves, and the vaso-neurous fasciculus is surrounded and protected by loose connective tissue, supporting in its meshes minute lobules of adipose tissue. Within the canals of the *pars reticularis*, the arteries and the nerves give off branches, and the subdivisions of these branches, ending in capillaries and fibrillæ, constitute a terminal plexus which is spread out horizontally in the *pars papillaris*, which sends outwards coils and loops and filaments into the papillæ, and inwards vascular and nervous plexuses to surround the follicles.

We are thus made aware that the vascular and the nervous plexuses of the skin are not simply horizontal, but that they are also centrifugal or papillary, and centripetal or follicular; the surface of a follicle being identical in point of organization with the surface of the derma. And the latter fact is made more obvious, when we recognize in the mammary gland, the colossal development of a cluster of sebiparous glands, and in the alimentary canal, a compound follicle open at both extremities, and having secondary and ramified follicles opening upon its surface, one of these follicles being the lungs and others the liver and the pancreas. The *horizontal* and the *vertical vascular plexuses* of the skin have

an important relation to its states of hyperæmia and congestion; hyperæmia of the horizontal plexus being indicated by a general suffusion, and hyperæmia of the vertical follicular plexus by punctation.

It is to be mentioned also, that in the organization of the papillæ cutis of the palmar surface of the hands and fingers, and of the plantar surface of the feet and toes, certain of the papillæ are simply nervous, and contain no capillary loop, while the majority are vascular. The nervous papillæ are especially destined for the faculty of touch, and the oval-shaped nervous mass which they envelop has been termed by Wagner, to whom we are indebted for its discovery, *corpusculum tactûs*; and by Kolliker, axile corpuscle. Moreover, the nervous papillæ are met with in greatest number where the faculty of tactile sensation is the most acute; as, for example, on the pulps of the fingers and the palmar surface of the hand.

Having, then, before us, the general idea of the position and structure of the skin proper, or derma; its relations externally and internally; the modifications presented by its surfaces, a coarse network on one face, and smooth and papillated on the other; perforated in both directions by tubular passages, those from the interior to give transit to vessels and nerves, and those from the exterior to serve for the current of secretions and the support of the hairs; composed intrinsically of connective, elastic, muscular, and adipose tissue; traversed by blood-vessels, lymphatic vessels, and nerves;—we may further note that the derma or corium is modified in the different regions of the body, in respect of all the conditions which we have just reviewed, in order to accommodate the special circumstances or functions of the region or of the part. In one situation it is loosely, in another it is tightly, bound down and adherent to the parts on which it rests. The pars reticularis may be remarkable for coarseness in one

situation and for fineness in another; the papillæ in certain parts are long and numerous, in others they are scanty and diminutive. The pores and the excretory tubuli are large and abundant in one place, small and scattered in another; and the proportions of the different constituents of the skin vary considerably, both in relative and in actual quantity. In one situation there exists an abundance of connective tissue; in another a remarkable quantity of elastic or muscular tissue; in this the vascular, in that the nervous supply predominates; and all these variations must be present to the mind in aid of our diagnosis and prognosis of cutaneous disease.

Moreover, in the pursuit and investigation of the pathology of cutaneous disease, to which the present sketch of the anatomy of the dermal textures is nothing more than ancillary, we shall have occasion to note the *plus* or the *minus* of the conditions at present under consideration, as among the most interesting of the features of our studies. We shall meet with instances in which the skin is too tightly and in others too loosely bound down to the structures beneath it; in which the papillæ are monstrous, or atrophied, or absorbed; in which the pores of the follicles are too large or too small; and in which the connective, the vascular, and the nervous tissues are at a minimum or in excess.

Next in importance to the derma is the epidermis, the covering by which the derma is invested; that serves the derma as an organ of protection and defence; that yields with its motions, and accommodates itself to the several conditions of health and disease of the more highly organized structure upon which it lies embedded; that in health is the inseparable bondsman of the *pars papillaris*, while in disease it has a tendency to break from its bondage and desert its relationship and its functions.

The EPIDERMIS is also termed the scarf-skin and

the scurf-skin, as though it were the *scarf* thrown over the unprotected derma, or from its known constitution of minute scales, which, by their separation and accumulation on the surface, constitute the *scurf*; but to us it seems more than probable that the former of these terms takes its origin from the latter, and, as a consequence, that the word *scurf-skin* is the most correct. Another of the synonyms of the epidermis is derived from the Latin *cutis*, namely, *cuticle*; the terms derma and cutis, and epidermis and cuticula, being mutually synonymous.

The epidermis is the horny and albuminous layer which covers the surface of the derma, and protects it from the injurious agencies of the external world; the same layer holding similar relations to the mucous membrane is termed epithelium, and just as the derma is continuous at the apertures of the body with the corium of the mucous membrane, so the epidermis is continuous with the epithelium, the epidermis and the epithelium together constituting a perfect sheath or varnish to the whole surface of the individual, both internally and externally. The epidermis is many times thinner than the derma, but, like the latter, it presents an internal and an external surface. The internal surface is moulded on every irregularity of the derma, forming sockets for its papillæ and sheaths for its follicles; while the external surface is more or less influenced in appearance by the evenness and unevenness of its bed; on one part where the papillæ are few in number and minute, being almost flat, and in another, such as the palm of the hand, where the papillæ are numerous and arranged in parallel ridges, being uneven and ridged.

Another peculiarity of the epidermis is deduced from its deficient elasticity as compared with the derma. The latter, although highly elastic, is necessarily thrown into wrinkles and folds by the movements of the body, and the creases or *lines of*

motion, as they are termed, are more or less permanent. The epidermis conforms to this condition of the derma, and exaggerates its results, the hollows and the prominences of the lines of motion, as represented by the epidermis, being deeper and more strongly marked than those of the derma; and, certain of the minuter lines of motion of the skin, which are scarcely perceptible in the derma, being conspicuous in the cuticle. Such, for example, are the lines which radiate from the pores of the follicles, and are produced by the intrinsic movements of the corium, namely, such as result from the action of its special muscular structure; for example, those concerned in the state of erection of the pores termed *cutis anserina*.

The epidermis, besides being the enveloping sheath of the derma, is a cell-tissue of the most primitive structure, endowed with a self-maintaining and self-producing power, undergoing development and growth, possessing a borrowed and an independent vitality, living and performing the destined functions of cell-life, elaborating a soft albuminous material into a horny tissue, and converting albuminous and proliferating cells into thin horny and compactly condensed scales; while in the follicles and glands it assumes the character of the active agent of secretion of the special products of those glands; eliminating *sebum* in one situation, *sweat* in another, and *milk* in a third.

If we subject the epidermis to the same form of examination as that to which we have already submitted the derma, we find it to present on its internal surface a soft cell-tissue, the *pars cellularis* or *rete mucosum*; and on its external surface a dense semi-transparent and firm portion, the *pars cornea*, or horny layer. In bulk, the horny layer is several times thicker than the soft or mucous layer; the latter being the immature or formative portion of the cuticle, consisting of cells with nuclei and

granules; the former the perfected structure; the process of elaboration and horny transformation of the cells being completed in the lowest stratum of the membrane. Above this, the horny portion, as a consequence of its manner of formation, is finely laminated, and the detrition of the laminæ on the external surface produces the fine scales which have suggested the terms scurf and scurf-skin.

It is in the soft under-stratum of the epidermis, the rete mucosum, that the pigment of the skin is deposited; but the pigment, in consequence of the preponderance of albumen, the production of horn, and the exhaustion of fluid, is more or less counter-balanced in the horny layer; hence the horny layer of the cuticle of the negro is whitish or greyish in appearance, and differs but little from that of the European. The rete mucosum is continuous with the cellular epithelium of the follicles and glands; and the cells of the rete mucosum and those of the epithelium may be regarded as identical in structure.

Like the derma, the epidermis is also perforated with tubular passages, which correspond with the pores of the skin, namely, the openings of hair-follicles, the sebiferous follicles, and the sudoriferous ducts. The former of these openings pass through the epidermis in a direct line, but those of the sudoriferous tubuli form a spiral coil, and both carry with them into the mouth of the follicle a conical process, or plug of the rete mucosum. It was the ignorance of this fact that committed certain of the older physiologists to the belief that the cuticle was not permeable; for when they separated a portion of the membrane, and poured mercury on its internal surface, the mercury could by no means be made to find a way through, the little conical plug and its prolongation being an effectual barrier.

Like the derma, the epidermis is modified in

different regions of the body to suit the especial functions of the part. It is thin on the eyelids, the scalp, the inner side of the limbs, and the scrotum; while it is thick on the outer side of the limbs, and remarkable for its thickness on the palm of the hands and sole of the feet. Moreover, at the extremity of the fingers and toes it is modified in an especial manner to constitute the nails. Under the influence of a morbid state of the economy, the epidermis may be increased or diminished in quantity and texture: it may be too dry or too moist; too flexible or too rigid; it may separate from its adhesion to the derma and give rise to vesicles and bullæ; or it may break up into laminae, and present us with the varied phenomena of squamæ and desquamation.

The FOLLICULAR and the GLANDULAR element of composition of the skin, in the next place, claims our attention. The follicles and the glands are a simple modification of the derma and the epidermis to suit a particular purpose; that purpose being the elaboration of a peculiar product, in one part and in one region known as the sebaceous matter, or the *sebum*, in another as the sudatory secretion, or the *sweat*. The agents of these secretions are the tubuli which have been already described as perforating the derma from without, which in the one instance are prolonged to the lower stratum of the pars areolaris and end in a small coiled-up mass, the *sudoriparous gland*; and, in the other, ramify in the stroma of the upper region of the derma, and constitute a small ramified and lobulated organ, the *sebiparous gland*. Besides these tubuli there is a third kind, which is straight in its course, which descends in the derma to a varied depth, sometimes extending beyond the lower face of the pars reticularis, and whose chief purpose is the support and maintenance in position of the hair, the *hair-follicle*. Furthermore, it may

be mentioned that wherever hair-follicles exist, the sebaceous follicle or gland is an offshoot from the upper part of that follicle.

In structure, the hair-follicles, the sebiparous follicles or glands, and the sudoriparous tubuli and glands are identical; all are faced by the derma and lined by a continuation of the epidermis termed epithelium, and all have a laminated condensation of the tissues of the derma around their cylinder, which is termed their *coats*. They also, like the structures heretofore examined, have their peculiarities which adapt them especially to the wants of a particular region. The hair-follicles have an oblique position in the skin, are large in certain situations, and wanting altogether in others, such as the palm of the hand and sole of the foot. United everywhere with sebiparous glands,—which form a kind of frill around the neck of the largest follicles, which depend in pairs like clusters of grapes from the neck of those of the scalp, and which are single in connection with the smaller follicles,—the hair-follicles of the minuter hairs become secondary to the sebiparous follicles and glands, as on the nose and in the meatus of the ears. In these latter situations the sebaceous follicles and glands are remarkable for their bulk; while in the palmar and plantar surface of the hands and feet they are wanting altogether, and give place to the sudoriferous tubuli and sudoriparous glands. Nevertheless, the differences in the three sets of organs in their most highly developed form are sufficiently characteristic; a simple straight tube, the hair-follicle; a tube convoluted at its extremity, the sudoriparous gland; and a more or less ramified and lobulated organ, the sebiparous gland. So also, and to an equal extent, do the functions of the three organs differ; the one a mechanical support, a sheath to the root of the hair; the second, the producer of an aqueous secretion with acid reaction; the third, the source of the

fatty element of the skin, bedewing its surface with an oleaginous moisture, giving brightness and brilliancy to the surface and to the hair, and protecting them both from the evils of attrition and the irritation of the atmospheric elements.

The remaining constituent of the skin, namely the hair, brings before us another interesting feature of the animal economy; developed from the fundus of its follicle through the agency of a papilla, the hair presents us with the analogue of a tooth: as the pulp of the tooth is converted into the fibrous dentine of that organ, so the hair-papilla or hair-pulp is transformed into the fibrous structure of the hair; the central embryonic cells of the hair-papilla are marked in the centre of the hair-cylinder by the medulla or pith; on the exterior of the fibrous substance of the hair is the transparent representative of the enamel, in this instance the cuticle of the hair, and exteriorly to the latter, the corrugated surface represents, according to Huxley, the parallel of the persistent capsule of the tooth. We are struck by the unexpected importance of the hair in the animal kingdom, and our astonishment increases when we find that a hair, a tooth, and an eye, are each a simple adaptation of the same primitive organ, altered in its form by special development to suit a special place in the organization, and fulfil a special office.

PHYSIOLOGY OF THE SKIN.

The PHYSIOLOGY, or consideration of the uses of the skin, brings to our notice its various qualities of complexion, texture, smoothness, and sensibility. A healthy *complexion* of the skin is one of the most striking of its characters, but not the most easy to describe, and in this, as in many other examples of

medical diagnosis, the eye of intelligence and experience comes to our aid. We know the delicate tints of white, of yellow, of blue, and of brown, of the dermal tissues, and we recognize as the healthy complexion, the lighting up of these tissues by the arterial and partly by the venous blood. To the Dermo-pathologist there is no better test of the health of the body than the appearance of the skin; and to him the complexion of the face affords powerful aid, in addition to his scrutiny by means of the tongue, the pulse, and the inward sensations of the patient; the muddy, the yellow, and the greenish tints of the complexion betoken mal-assimilation; while an accumulation of the duskier hues, raises a suspicion of the solar plexus and its dependent viscera being the source of disorder.

Normal *texture* of the skin is evinced by a healthy firmness, a medium thickness, and a proper elasticity of the integument, and, like the complexion, is to be tested by negative rather than by positive signs. It is neither too soft nor too thin, neither is it flabby nor wrinkled, but it possesses those incomparable qualities which we associate, with much reason, with a healthful condition, which in fact represent the normal standard of health. So also a healthy *smoothness* of the skin is an important indication of its proper nutrition and renovation. An excess of smoothness may result from a morbid change such as interstitial deposition or effusion; while a want of smoothness may be the consequence of unhealthy elaboration on the part of the cell-tissue of the epidermis; or of imperfect secreting function of the sebaceous and sudatory glandular apparatus.

There is no better test of the normal or abnormal condition of the skin than its state of *sensibility*, and an aberration of sensibility may be regarded as a proof of its deteriorated function. We have examples constantly before us of morbid sensibility; the body is unable to bear the chill of the morning bath,

so necessary to the health of the economy ; the skin of the face is irritated by the action of soap, so necessary for its cleanliness and comfort. Every day we are constrained to modify our directions or our treatment to suit the abnormal sensibilities of our patients. The morbid sensibility of the skin may assume the positive character of pain, or it may be the seat of itching, tingling, burning, creeping, piercing, shooting, &c., and the form of pain is sometimes sufficiently characteristic to enable us to determine the nature of the disease ; the tickling itchiness of scabies is pathognomonic ; so also is the prickling, tingling, and burning of herpes ; so likewise are the creeping, stinging, and darting pains of prurigo, the throbbing and burning tingling of urticaria, and the fierce and concentrated itching of papular and indurated ekzema ; nor are examples of decided neuralgia absent from the cutaneous tissues : it may be a dermatalgia of the normal tissues, or it may be a dermatalgia of morbid tissues, as in the instance of ekzema neurosum.

The nervous sympathies of the skin are manifested in the blush of emotion ; the flush of heat associated with taking food when the stomach is weak and the digestive organs impaired ; and the hyperæmic congestions excited by irritability of the abdominal organs, and especially by those of the uterine and the reproductive system. That very troublesome disorder, urticaria, is an illustration of the morbid sympathies existing between the digestive organs and the general surface of the body ; and that not less annoying but more enduring affection gutta rosea, between the same organs and the skin of the face. While the direct influence of the nervous system on the skin or neurosis, is evinced in the development of the vesicles of herpes.

To the physiological operations of the integument belong in like manner the disorders of secreting functions, the derangement of the sebaceous and

sudatory secretions; alteration of pigment-formation and distribution, and morbid changes in the epidermis, the nails, and the hair.

PATHOLOGY OF THE SKIN.

The PATHOLOGY of the skin opens up to us an investigation replete with important and varied phenomena; and our interest in the subject is increased by having the morbid operations, as it were, spread out immediately under our eye and within the reach of our hand. We may distinguish diseases which are especially affections of the *derma*; others which are affections of the *epidermis* and *nails*; and others again which are affections of the *glandular apparatus*. While the disorders of the *derma* may result from simple *inflammation*, they may involve separately the *nerves*, the *blood-vessels*, and the *blood*; they may be derangements of *development*, *nutrition*, and *growth*; or they may exhibit the pathological condition of *metamorphosis of tissue*.

Inflammation of the *derma* may present itself as a simple redness or *erythema*; as a rising of the follicles of the skin constituting *papulae*, or larger masses termed *tubercula*; as minute blisters termed *vesiculæ*, or large blisters, named *bullæ*; as vesicles containing pus, or more correctly as *pustules*; and as detached laminæ or scales of epidermis termed *squamæ*; and to these states or *lesions*, as they are technically called, may be added stains or *maculae*, which may be left behind by the inflammatory process. These pathological lesions may exist separately, or they may all, or nearly all, be present at the same time; and they are sufficiently conspicuous and decided to have been fixed upon by Willan as the signs or types of his eight orders of cutaneous diseases.

ERYTHEMA, according to Willan, or rather, EXANTHEMA or rash, is represented by "superficial red patches variously figured and diffused irregularly over the body, leaving interstices of a natural colour, and terminating in cuticular exfoliations."

PAPULA, or pimple, is "a very small and acuminated elevation of the cuticle, with an inflamed base, very seldom containing a fluid or suppurating, and commonly terminating in scurf."

TUBERCULUM or tubercle is a "small hard superficial tumour, circumscribed and permanent, or suppurating partially."

VESICULA, or vesicle, is "a small orbicular elevation of the cuticle, containing lymph, which is sometimes clear and colourless, but often opaque and whitish, or pearl-coloured; it is succeeded either by scurf or by a laminated scab."

BULLA, or bleb, is "a large portion of the cuticle detached from the skin by the interposition of a transparent watery fluid."

PUSTULA, or pustule, is "an elevation of the cuticle with an inflamed base, containing pus."

SQUAMA, or scale, is "a lamina of morbid cuticle, hard, thickened, whitish, and opaque."

MACULA, or spot or stain, is "a permanent discoloration of some portion of the skin, often with a change of its texture."

The definitions of Willan are distinct and lucid, and are still employed in the sense in which they were used by that eminent man, with the exception of the last; the maculæ of the present day applying simply to stains of temporary existence, such as the congestions of small-pox, and the discoloured sequelæ of lepra and dermatosyphilis; while the maculæ of Willan, namely the ephelidæ, the nævi and the spili, are distributed in accordance with relationships, such as are determined by a more advanced school of pathology.

The signs of inflammation of the skin, or *dermatitis*, as of inflammation in general, are, redness, pain, heat, and swelling. In simple *redness* we have to distinguish between that which is slight and transient, a mere filling of the capillaries with blood, or hyperæmia; and the more permanent redness, accompanied with other changes in the tissues of the skin, which constitutes dermatitis. The limits between the physiological and the pathological are barely discernible; the blush of emotion is scarcely to be distinguished from the blush of transient erythema or urticaria, and the too frequent repetition and the permanence of the blush becomes a confirmed erythema, as in gutta rosea. The pathological blush is termed erythema and exanthema and also erysipelas; but these terms, although signifying nothing more than redness, have special meanings attached to them in their practical application and use.

The redness of the skin offers considerable variety of character; it may be universal or partial; it may also be uniform or punctated; and it may vary in its tint, from the bright scarlet of arterial blood to the purple and the blue or the livid, of venous blood; or to the lurid and the sombre hue of morbid blood. An uniform suffusion results from the equable congestion of the papillary layer of the derma, the surface capillary plexus; while congestion of the follicular or vertical capillary plexus gives rise to a punctiform redness, which may exist independently, or be a part of the uniform redness. In erythema and erysipelas the redness is uniform; while in one variety of roseola, as also in the exanthematous fevers, namely, rubeola, scarlatina, and variola, it is punctated. The latter diseases may also be taken as the best examples of variety of redness; scarlatina and variola being remarkable for the brightness of their hue, while rubeola is ruby or raspberry coloured, and roseola rose-coloured or

crimson, a tint that verges upon purple. In a torpid state of the circulation of the skin these tints are depressed to the purple and the livid, and especially in those forms of hyperæmia which, like kyanosis, are associated with a mechanical interruption of the circulation. The alterations of redness dependent on morbid blood, are illustrated by the muddy hues of dermatosyphilis, those forms of discoloration which have received the name of *copper-coloured*.

Hyperæmia, or distension of the vessels with blood, must necessarily be associated with some degree of *swelling* of the skin: the swelling may be slight, so as to appear hardly appreciable, or it may be strongly marked, and a distinguishing symptom. Swelling, however, is no test of the degree of force of the hyperæmia, but is dependent sometimes on the region of the body affected, sometimes on constitutional predisposition or temperament, and sometimes on the nature of the disease. An erythema in the palpebral region will generally be attended with more or less tumefaction; one form of erythema is remarkable for its tumescent character, erythema tumescens; there is a general state of swelling of the skin in rubeola, scarlatina, and variola; and a special tumefaction in erysipelas. The swelling of the dermal tissues is sometimes remarkable for its rapidity and suddenness, as in erythema tumescens, and after the bites or stings of certain insects; and sometimes it is slow and gradual. In general, it is due to the escape from the vessels of the serous element of the blood; but in certain cases, as in erythema nodosum and tuberculosum, and especially in urticaria, is dependent in part on spasm of the muscular structure of the skin. Where exudation into the affected tissues is the cause of the swelling, as in erysipelas, the skin is apt to assume a peculiarly transparent appearance, as though it were tensely injected with a transparent fluid, and to resemble brawn. The brawn-like transparency and texture

of some forms of erysipelas is very remarkable, and similar brawn-like blotches are met with in elephantiasis anæsthetica. Again, it is not uncommon for the accumulated fluids of the tissues to be discharged upon the surface of the derma, and to raise up the epidermis into vesicles and bullæ; in this phenomenon we find explained the vesicles of miliaria, and especially of ekzema and erysipelas; the latter constituting the erysipelas bullosum.

Increased temperature, or *heat* of the skin, is not a conspicuous sign in connection with the pathology of the dermal tissues; in a few instances we have noted a rise in the thermometer of a few degrees in ekzema and erysipelas, and also in scarlatina and variola; but, in general, the sensations of heat experienced by the patient are forms or modifications of pain rather than an actual augmentation of temperature. Occasionally, when the patient has complained bitterly of heat, the sensation to the hand of a healthy person is one of cold; the feeling of extreme heat in scarlatina and variola is relieved by excluding the atmosphere; and the heat of the zona ignea, or herpes zoster, is a mere modification of sensibility. In like manner the chills and flushes of heat which are associated with certain forms of hyperæmia, must be looked upon as contrastive sensations rather than as actual variations of temperature.*

Pain in the skin, and accompanying cutaneous eruptions, presents a great variety of character:—the most common manifestation of painful sensation

* "Under certain conditions," says Liebig, "a chill is felt inwardly without the temperature of the body diminishing on that account, and warmth is experienced without there being an increase of heat. These sometimes point to a state in which certain nerves throw off more warmth than they receive, or receive more than they throw off. The sensation serves only to announce an inequality, which, if it be slight and passing, can, by various stimulants, be easily removed. If it be lasting, it is looked upon as a symptom of illness."

is pruritus, and in addition to pruritus there may be a morbid sense of heat and cold, burning, tingling, pricking, darting, shooting, creeping, sometimes weight and throbbing, and sometimes soreness and aching. The pruritus also has its shades of modification; it may be tickling and not seriously unpleasant, such is the itching of scabies; it may be tingling, as in urticaria; burning and shooting, as in herpes; or pungent and irritating, as in ekzema. There is reason to believe that these modifications are in some degree influenced by the extent of nervous tissue involved in the disease: in scabies and erythema the papillary surface only is affected; in urticaria, deeper filaments of the cutaneous nerves; in herpes, as we know, the affection of the nerve extends further along its course and even to its trunk; while ekzema is complicated with graver changes in the tissues of the skin. If James I. could advocate the monopoly of scabies by kings and purple blood, on account of the delights of scratching, he would be little inclined to extend his protection to the fierce itching of ekzema; which the Romans called scabies, and the Greeks psora, from the tearing and laceration to which it gave rise to assuage the pruritus. The itching of ekzema now and then excites a state of frenzied suffering, and some of those who have writhed under an allied disorder, namely prurigo, have compared their torments to being broiled on a gridiron; to being eaten up by ants; and to being pierced all over with halberds. Occasionally we find actual pain substituted for itching, as in ekzema neurosum, and then the sensation is one of being denuded of skin, or of exposure of the bare nerve; the slightest touch occasions the most intense suffering, and the application of remedies is almost impossible.

IN our preceding lecture we took a survey of the territory which we propose to investigate ; we studied the map of the region whose natural intricacies it is our business to explore ; we took a general review of the disturbances that might by possibility arise, that we may prepare ourselves with the means of regulating and controlling such disturbances and disorders whenever they occur. We looked upon the integument as composed of a derma, an epidermis, and a subcutaneous areolar and connective tissue, and in each of these three divisions of its structure we met with separate points for consideration ; in the epidermis we found a formative growing layer, the rete mucosum, and a perfected horny layer ; in the derma we discovered a follicular and a glandular structure, together with vessels, nerves, connective tissue, and muscular tissue ; and in the subcutaneous web we noted the presence of connective tissue, adipose tissue, and the cæcal ends of the larger hair-follicles. But however much we might be disposed as physiologists to admire the beauties of structure and adaptation of the cutaneous organ, in its whole and in its parts ; yet as pathologists, and especially as dermo-pathologists, our view of the integument is necessarily associated with the contemplation of its possible abnormal and morbid derangements. Instead of being smooth and clear and flexible, the horny layer (*lamina cornea*) of the epidermis in a pathological state, may become rough, opaque, and brittle ; the rete mucosum (*lamina mucosa*) may be altered in colour and in structure ; and the several components of the derma and of its subcutaneous layer may be changed in their appearance and function.

We have considered the chief of the pathological changes affecting the derma, under the heads of redness, swelling, heat, and pain ; the *rubor, tumor, calor, et dolor* of simple inflammation. We recognize in *redness* the distension of the capillaries with

blood; we noted the differences of character presented by the redness when the hyperæmia occupied the peripheral surface, and when the follicular inflexions of the derma, in the former case producing a general suffusion, as in blushing; in the latter a punctation, as in measles. We remarked on the variety of the tints of redness, from the scarlet of scarlatina, through the ruby hues of rubeola, to the purple and the livid of kyanosis; we took under our consideration the abnormal coloration of dyskrasia as illustrated by dermatosyphilis; and we may add, further, to these modifications of colour, that which results from the exudation of blood from its vessels, as in the instance of purpura and contusion.

Swelling, in various gradation, we found to be a common associate of cutaneous disorder, in some measure resulting from distension of the capillaries, and the consequent accumulation of blood in the skin; but in a greater degree from the absorbent action of the cell-elements of the derma. The presence of swelling betokens a state of disturbance of activity of the cell-elements of the tissues affecting their nutritive function; and, under the influence of such disturbance, they absorb with rapidity and eagerness the fluids brought to them by the blood-vessels, and become distended and enlarged, the sum of their enlargement being the measure of the amount of swelling produced.* In physiological hyperæmia, as in blushing, there is doubtless a transitory state of swelling of the skin; and we know that by a repetition of such flushes a permanent enlargement of the capillary vessels, or, as

* The researches of German Pathologists tend to show that the presence of an excess of nutrient material in the tissues leads both to hypertrophy and hyperplasia of their elementary constituents; cells are swollen, their nuclei being enlarged; new cells are developed; and the cells of connective tissue shoot forth ramifications which exceed the normal boundary of distribution of that substance.

it is termed, *angeiektasia*, is produced, which is often accompanied, as in *gutta rosea*, with enlargement and thickening of the *corium* of the skin. In that more extensive and prolonged flush of the skin which accompanies the *exanthemata*, the swelling is general, and, as we know to be the case in *variola*, often so considerable as to distend the head and features to a frightful degree.

There can be no doubt but that swelling is very much modified by the *sthenic* or *asthenic* condition of the cell-elements of the tissues, and that the *sthenos* or *asthenos* of the latter is to a very considerable degree under the influence of the tone or power of the constitution. In a mild example of *variola*, or *scarlatina*, with abundant *hyperæmia*, the swelling may be moderate, while in another case, where the constitutional powers are depressed and the tissues participate in the general weakness, the swelling may be excessive, although the *hyperæmia* is only slight. To these causes must be attributed the excessive swelling which accompanies *erysipelas*; and the frequent association of extensive swelling with chronic affections in which both the tone of the system and of the cell-elements of the part is reduced. Wherever much connective tissue prevails, to the exclusion of blood-vessels, as in the eyelids and scrotum, there swelling is a common and striking occurrence; or, where the circulation is weak from peripheral position, as in the nose and extremities. While, on the other hand, there are certain forms of swelling, such as that which accompanies *erythema tumescens*, wherein the cell-elements of the tissues would seem to be chiefly in fault. We have an example of swelling dependent on a local *asthenia* in the very considerable tumefaction that usually accompanies the sting of a wasp, and sometimes the bite of less-venomous insects; but at the same time we know full well that any extraordinary tumefaction is always associated with

some degree of asthenia of the individual, and we note the occurrence of extreme swelling as an unusual phenomenon.

The conclusion to be drawn from these examples would therefore appear to be that while tumefaction is undoubtedly due, as its proximate cause, to an excessive absorbent action on the part of the cell-elements of the tissues; yet that that excessive action, if not asthenic from the first, speedily becomes so; and that its sthenic or asthenic character is under the immediate influence and partakes of the nature of the general constitution. Upon the same data we are permitted to frame the theory, that in proportion to the debility of the cell-elements will be the more aqueous quality of the fluids absorbed, the retinence of the aqueous condition, and the nearer the approach of the swelling to the state of œdema. While, on the other hand, the assimilation of the ingested fluid, and the expulsion of its excess, will demonstrate the existence of a more vigorous cell-power, and lead to a more speedy dispersion of the tumefaction.

We moreover remarked, that the sensations of *heat* in the morbid skin were in general greatly disproportioned to the actual temperature, in consequence of the heightened sensibility of the organ; this is remarkably the case in herpes, the *zona ignea*, and sometimes also in ekzema. In the latter disease we have noted the temperature of the skin as high as 103°, while in scarlatina and erysipelas it sometimes reaches an elevation of 104° or 105°; and in anæsthetic elephantiasis it has been found, in the hands, as low as 68°, and rarely higher than 90°.

Under the head of *pain* we enumerated a goodly list of morbid sensations; but we may further illustrate this point by mentioning the following catalogue of painful sensations drawn up by a patient suffering under dysæsthesia. At various times she experiences dull pains in the skin, acute

transient pains, shooting, darting, pricking, smarting, tingling, itching, crawling, and burning pains, with sensations of throbbing, quivering, trickling, shivering, and trembling; sometimes the skin has a sore or rubbed feeling, and is always unnaturally tender and sensitive, and more sensitive to slighter stimuli than to those of a severer kind. This strange record of suffering is attributable to hysteria, the common parent of abnormal feminine disturbance; but we may be permitted to question the degree to which the uterus is answerable for such abnormal symptoms; they sometimes occur in men, in which case hysteria is clearly out of the question; but the real cause is, in fact, disturbance of function of the cœliac centre of nervous plexuses; hence a more appropriate and correct name than hysteria would be *cœliaca*. The term *cœliaca* would be applicable to men as well as to women, and would better express the nature of the pathological derangement; since hysteria is, we believe, as often an effect of a central nervous irritation as the cause of a radiation of morbid sympathies. In the case to which we have just referred, the patient was a lady of strong mind and good common sense, and her nervous sufferings were a source of as much surprise and vexation to herself as they are to those around her. Her illness began by a nervous shock, fright, and affliction; the seat of injury consequent on these causes was doubtless the solar plexus, and from the solar plexus as from a centre her morbid sensibilities took their rise; the uterus suffered with the other abdominal organs, and more particularly with the alimentary canal; but the latter affection, and the consequent hysteria, were in reality a secondary result. Among the rest of the morbid sensations which this lady experienced, was the consciousness of the movement of the blood through its vessels, and an inward sense that occasioned involuntary fright and alarm.

From the more general signs of pathological

derangement of the skin already mentioned, namely, redness, swelling, heat, and pain, we may next proceed to the particular and special signs, which are usually termed *lesions*; and we cannot do better than study the pathological lesions of the integument side by side with the commonest and most universal of diseases of the skin, namely, ekzema. Ekzema, as a word, simply means *eruption*, and it may be truly said that it is *the eruption* of the skin; as the most common of the eruptions it is that which comes the most frequently under our observation, and is therefore the one to which we can most readily refer, the most easily study, and with which we can with the greatest facility compare other forms of cutaneous disease. The word ekzema was given to this very common eruption by the Fathers of Medicine, namely, the Greeks; but they also had another name for it, which expressed one of the most prominent of the characters or qualities of the disease,—namely *psora*, and we must endeavour to pronounce the *p* as well as the *s* in this word to give it its proper effect. Now *psora* means *the itch*, because of its itchiness, because, in fact, of the necessity, which is induced by its itchiness, to rub and to scratch; the word *psoein* means to rub, and *psoriaein* to have the *psora* or itch. This is the language of Hippocrates, who dates back five hundred years before the Christian era; and these words are as applicable to the disease in question at the present hour as they were in the time of our great predecessor. But let us pursue the matter a little further. “Familiar to our ears as household words” are the terms ekzema and psora, and so also is another word, psoriasis; but until now it may not have been known to you that ekzema and psora have the same meaning, and are in fact synonymous; that ekzema announces the *eruption* only, whereas psora represents the most marked of its *symptoms*, its psoric or itchy tendency. By-and-by, we shall have

to point out to you that ekzema or psora presents two very marked and distinctive forms, represented by the words *humidum* and *siccum*; namely ekzema humidum, ekzema siccum, or psora humida and psora sicca. The moist form is distinguished by moisture or discharge, and the dry form by dryness and a consequent exfoliation of the cuticle in small scales; ekzema siccum, or psora sicca, is therefore squamous as well as being itchy, and in these two qualities combined we find the explanation of the word *psoriasis*; psoriasis, in fact, being the squamous form or stage of psora, of which the word is an obvious derivative. It is important to remember this, because the word psoriasis has been generally misapplied since the time of Willan, and the evil has been increased of late years by the assignment of the term to the lepra of the Greeks, the lepra vulgaris of Willan. We also beg to remind you that the *a* in psoriasis should be pronounced long, namely, *psoriāsīs*.

But we must say a few words more with regard to ekzema before we commence to observe it more carefully. It may seem to you that we attach too much importance to the meaning of a word; but, gentlemen, we must ask you to accept in faith that which we now declare to you; we have not laboured at the study of cutaneous medicine for thirty years without having come to certain positive conclusions, and conclusions which we believe to be founded in truth. One of the first articles of cutaneous faith that we call upon you to subscribe to, if you would in future be ranked as our disciples, is, that ekzema and psora are identical, and that psoriasis is a stage of psora. When the time comes, we shall be equally able to prove to you that that other disease which is now so commonly termed psoriasis by the Foreign schools, is not psoriasis, but is really the lepra of the Greeks, the lepra vulgaris of Willan. But we have other masters besides the Greeks, and

masters whom it is our delight to honour,—namely, those worthy successors of the Greeks, the Romans. Greatest among the Roman physicians was Celsus; and Celsus designates psora and ekzema by the terms *scabies* and *impetigo*; scabies derived from *scabere*, to scratch—itself a derivative of *scaphein*, to dig as with the nails in scratching—is the analogue of psora; while impetigo, *ab impetu agens*, a breaking out with impetus, corresponds with ekzema; and all the four terms apply to the same disease. At the present time, however, we dispose of these four terms differently; ekzema we retain as the type of psoric affection; impetigo, we apply to a pustular ekzema; scabies, we restrict to the ekzematous eruption, excited by the *acarus scabiei*; psoriasis we give to the dry and squamous ekzemata, especially when associated with thickening and cracking of the skin and much pruritus; and psora we discard, as having no special occasion for its use.

Gentlemen, we offer you no excuse for this digression from our subject; we have led you over classic ground, and through a territory in which disputed questions prevail, but we have endeavoured to guide you with the lantern of knowledge to the temple of the veiled goddess whom all true worshippers of science most venerate; and we conclude our episode by informing you that although in cutaneous medicine we are ungracious enough to have rejected the ancient term *psora*, yet that we retain it in our popular language in the simple and forcible expression *sore*.

Well, gentlemen, if we have a subject before us suffering from ekzema, we shall inevitably find *redness* or hyperæmia more or less extensively distributed; we shall have *swelling* or thickening from infiltration of the affected skin; we shall possibly discover an elevation of temperature; and we shall pretty certainly be made aware of *pain*, commonly in the character of burning or scalding, itching,

and probably tingling and pricking. But besides these morbid states or lesions, the common signs of inflammation of the skin, we shall meet with other signs of disorder, namely:—minute elevations, which are termed *papulæ* or pimples; or small elevations filled with a transparent albuminous fluid, namely, *vesiculæ* or vesicles; maybe with small vesicles filled with pus, vesico-pustules, or simply *pustules*; then we shall find *excoriations* exuding a viscous albuminous fluid, sometimes transparent and sometimes purulent; or the thickened skin may be fissured with *chaps*; or there may exist coverings of different kinds to the inflamed corium, sometimes assuming the character of *crusts* or *scabs*, and sometimes of small *scales* undergoing constant desquamation. Again, we may observe, in conjunction with these lesions, *scratches* denoting the operation of the nails for the relief of itching; and lastly, *maculæ* or stains left on the affected part after the healing of the skin.

Now all these *lesions* may be present at successive periods on the same person and in the same disease, for example, ekzema; and if we look at them a little more closely, we may see reason to arrange them into two groups, namely, such as are of earliest appearance, or *primary*; and such as are subsequent, or *secondary*. For instance, the redness, the papule, the vesicle, and the pustule are primary; while the desquamation, the excoriation, the fissure or chap, the crusts, the scabs, the scratches, and the stains are secondary. But besides these lesions, which are all present in ekzema, there are a few more which belong to other forms of disease, and therefore we shall assemble all that are usually recognized—under the two heads, primary and secondary, and consider and describe them seriatim.

PATHOLOGICAL LESIONS.—The *primary lesions* of the skin, or signs of a morbid state, are as follows :—

Rubor.	Pustula.	Tuberculum.
Papula.	Bulla.	Tuber.
Vesicula.	Squama.	Macula.

And the *secondary lesions* are :—

Desquamation.	Fission.
Excoriation.	Ulceration.
Induration.	Cicatrization.
Incrustation.	Discoloration.

RUBOR, or **REDNESS**, is the state of colour of the skin produced by the abnormal distension of its vessels with blood. It may be simply *functional* and uncomplicated by any change in the vessels themselves, or it may be *structural* and depend upon a permanent state of enlargement or hypertrophy of the vessels, or alteration of their coats. Functional redness may be present as a mere transient blush, or physiological hyperæmia, or it may represent many degrees of intensity of pathological hyperæmia and constitute an exanthema or an erythema. Structural redness, on the other hand, may be due to a permanent enlargement of the vessels of the skin, termed *angiectasia* and *vascular nævus*; or it may result from lesion of the coats of the vessels and the escape of the blood into the parenchymatous tissue, as in *purpura*, and also in *contusion* of the skin.

Pathological redness also presents as phenomena, —that it may subside without alteration of nutrition of the skin, as in some of the slighter forms of erythema, or that it may induce a suspension of nutrition of the epidermis, and in this way give rise to *exfoliation* and *desquamation* of the cuticle; or it may be associated with *exudation* and *hyper-*

nutrition of the cell-structure, causing thickening; or, finally, it may become chronic and accompany the secondary series of morbid processes, and be in itself a secondary lesion. You remember, gentlemen, that it was upon redness that Willan founded his definition of *exanthema* or *rash*,—namely, that it consists “of red patches on the skin, variously figured, in general confluent, and diffused irregularly over the body, leaving interstices of a natural colour.” In this definition, however, it is clear that Willan had in his mind the rash accompanying the exanthematous fevers,—namely, rubeola, scarlatina, and variola.

If we incline to seek for examples of the several forms of pathological redness which we have enumerated, we shall find as illustrations of hyperæmia subsiding without secondary changes, erythema, urticaria, and roseola; suspended nutrition of epidermis resulting in exfoliation is seen in the exanthematic fevers; and suspended nutrition of the epidermis with hypernutrition of the cell-tissue or exudation, in ekzema; ekzema may also be taken as indicating besides, a hyperæmia of a chronic character and belonging to the group of secondary rather than of primary lesions.

Redness, therefore, is an important sign of cutaneous disease, and betokens either an excess of blood in the skin or an escape of blood from its vessels. The excess of blood may be physiological or pathological, and in the latter case it may be temporary in consequence of resulting from undue action, or it may be permanent, from an alteration of structure in the part. Again, redness will excite in our minds a varying degree of interest, according as it may be general or partial, of larger or smaller extent, of irregular or circumscribed figure, or as standing alone, or associated with other pathological signs or lesions, whether primary in their nature or secondary.

The PAPULA or pimple is an elevation of the cutis, for the most part conical, but sometimes semiglobular or flattened, minute in size, of a variable tint of redness, generally accompanied with itching, and commonly succeeded by a thin scale. We will ask you to bear in mind the definition of papula given by Willan,—“a very small acuminate elevation, with an inflamed base, very seldom containing a fluid or suppurating, and commonly terminating in scurf.” If we seek further into the nature of a papula, we shall find that it has its seat at the aperture of one of the follicles, of the so-called pores, and that it is produced by hyperæmia of the vascular plexus of the follicle and exudation into the intervascular parenchyma. The degree of redness of the papula will bear relation to the extent of the hyperæmia, and its bulk to the amount of exudation. You must satisfy yourselves, at the first opportunity, of the exact seat of the papula, and the knowledge you will thereby acquire will help you very materially in comprehending the pathology of the skin. With careful scrutiny you will discover the aperture of the follicle at the extreme summit of the papula, and you will find the summit to be transparent, from the presence within it of a conical plug of epidermis which normally occupies the dermal entrance of the follicle. Rayet and others pricked the summit of the papula under the expectation of finding an explanation of this transparency in the presence of fluid; but they were naturally disappointed, having mistaken the cause of the appearance.

Besides its conical or semiglobular or flattened figure, we have to note, in connection with papula, the disturbance of innervation to which it gives rise and the consequent pruritus. The papula is remarkable for its pruritic tendencies, but we are unable to say with any certainty whether the itching is due to pressure on the filaments of the terminal nervous

plexus by the hypertrophied cells of the parenchyma, or to absorption by the nerves themselves, of the exuded fluid of the vessels, or of the excreted fluid of the cells. In a few instances the papula subsides to the normal level of the skin without desquamation; more frequently the morbid action of the tissues determines an arrest of nutrition and the consequent exfoliation of the cuticle covering the summit of the cone, while, in not a few instances, the itching provokes scratching, by which the summit of the papula is torn off, and a scab is produced, either through the discharge resulting from excretion by the over-distended cells, or from the escape of a minute drop of blood, the exudation in both instances desiccating by evaporation on the summit of the papule. The duration of an individual papule ranges from a few hours to one or two or more days.

As redness is the type of the exanthemata and the erythemata, so prominence is the type of the *papulæ* or papular affections, and especially of leichēn. We need not stop here to inquire by what perversion of signification the term leichen, meaning literally a tree-moss, has become symbolized by a papula of the cortex of man; but we shall do well to accept it as a fact. By leichen we understand a papular eruption, and we have other examples of a papular eruption in strophulus and prurigo. If we go back to the illustration of cutaneous disease which we selected as a standard of comparison—namely ekzema, we shall find *papulæ* to be a constant element of that eruption, and sometimes a most conspicuous symptom, as in the variety which we term ekzema papulosum and also ekzema leichenodes; and the papule of ekzema is true to the characteristics of its family stock; the papules are minute, they are conical, hard to the touch, and extremely pruritic. Strophulus is a papulous eruption occurring in infants, and the pimples are larger than the typical papula; they are frequently rounded at the summit instead

of being conical, and they have an amount of redness and exudation around their base greater than is met with in the typical leichen. The papulæ of leichen planus are remarkable for their flattened and depressed summit, while those of prurigo are remarkable for the extreme degree of pruritus by which they are accompanied, they are often not perceptible until the pruritus has excited scratching, and the scratching has, as it were, called them into being; and they are especially distinguished by the small black scab resulting from exuded blood that crowns their summit after they have been violently torn with the nails. There is another papule which is remarkable for a tingling itching, which is larger than the papule of simple leichen, which has the pale hue of the tubercles of urticaria after it has been scratched, and which, like the papule of prurigo, is succeeded by a small black scab: this is an eruption of children, and is termed leichen urticatus. Then we find in our catalogue of papulæ, the minute papules of rubeola and scarlatina; the papules of variola, hard and gritty at first, and afterwards undergoing development into vesicles and pustules; the papules of syphilis, distinguished by their dull-red colour and the absence of pruritus; the papules of gutta rosea; and the large follicular papules of akne and sykosis, together with other forms of papulæ dependent on follicular accumulations of epithelial exuviæ or sebaceous substance, on hypertrophy of connective tissue, as in the instance of akrochordon, or on hypertrophy of papillæ, as in verruca.

If, therefore, we proceed to sum up the special characters of a papule, we shall find them comprehended in a consideration of its size, figure, colour, seat, symptoms, and decline. Its *size* ranges between a line and two lines, or, may be, three—that is, a quarter of an inch: the latter would be esteemed a very large papule, verging on a tubercle. Our

measurements of the papulæ of cutis anserina give a diameter of half to three-quarters of a line; while in height it averages about a line. The *figure* of the papule is, for the most part, conical, sometimes globose, and sometimes flattened or depressed in the centre, as in leichen planus. Its *colour* varies from white to red, and from red to its deeper tints, reaching even to the confines of purple and livid; the white colour is seen in leichen urticatus, the bright-red in leichen simplex, and its purple and livid hues in leichen lividus. The *seat* of the papule is very obviously the aperture of a follicle, and from the follicular plexus it derives its red colour and its prominence. Its most characteristic *symptom* is pruritus, and its *decline* is accompanied with the separation of the circle of cuticle which originally formed the covering of its summit.

The papule, which we have just been describing, might be called the papula of Willan, or the hyperæmic papule; for we need not remind you that the term pimple is commonly employed in a more universal sense. According to Hebra, a papula is "a solid projection above the surface" consequent on "any morbid change in the skin," and presenting a size varying between that of a "millet-seed and a lentil, and containing no fluid." In reference to *size*, he names the papulæ *miliares*, *miliiformes*, and *lenticulares*; and in point of *figure*, he treats of them as being *acutæ*, *planæ*, *conicæ*, and *globosæ*. These words of Hebra remind us of the use which we sometimes make of seeds and coins as a comparison of size. Thus, there are, the millet-seed; the mustard-seed, black and white; the hemp-seed; the lentil; the pea; the bean; and several kinds of nuts, of eggs, and of fruit; besides the coins in common use, the smaller and the larger silver pieces, and the copper pieces. But who amongst us can form anything more than an approximate guess of the size of an object from the use of such terms? who has de-

terminated by experiment that the size of the black mustard-seed is about half a line in diameter; the millet-seed, one line; the white mustard-seed, a line and a half; the hemp-seed, two lines; the split pea, about three lines, that is, a quarter of an inch; the fourpenny piece, more than half an inch; the sixpenny piece, three quarters of an inch; the shilling piece, one inch; and so on? We know how easily we can be deceived as to the size of objects; and, therefore, we advise you, very seriously, in your essay to distinguish size, to have recourse to fractions of an inch, be they lines or eighths, in preference to the before-mentioned objects. When Hebra speaks of *papulæ miliares*, we may understand papules having the diameter of a line; but when he mentions *papulæ lenticulares*, we hesitate to accept the comparison, because the lentil measures more than a quarter of an inch in breadth, and prominences having such a bulk we should at once designate as tubercles.

Hebra also reminds us that the range of signification of the word papule, or pimple, is much more extensive than our definition is calculated to admit. For example, besides the common papula produced by exudation, whether in the walls of the follicles or in the papillæ, there are the prominences resulting from muscular spasm, constituting *cutis anserina*; accumulations of epithelial exuviae in the follicles; accumulations of sebaceous matter in the follicles; abnormal structure of the sebaceous gland, by Hebra termed "degeneration," while we should call it arrest of development; hypertrophy of papillæ; and hyperplasia, or new formation of papillæ; to which he further adds, hæmorrhage into the rete mucosum, and illustrates this state by reference to Willan's *leichen lividus*,—an evident mistake, since the *leichen lividus* of Willan is nothing more than purple and livid papulæ. It is well, however, that we should remember that the word pimple has a general mean-

ing in addition to its specific and technical signification.

The VESICULA is a prominence of the epidermis containing an aqueous fluid, of minute size, and variable shape, being sometimes conical in figure, more frequently semiglobular, and sometimes flattened or depressed. Willan defines it as "a small orbicular elevation of the cuticle, containing lymph, which is sometimes clear and colourless, but often opaque, and whitish or pearl-coloured; and succeeded either by scurf or by a laminated scab." The average range of size of a vesicle is half a line to two lines, and its height is somewhat less than the breadth of its base. A vesicle three lines in diameter,—that is, of the bulk of a small pea,—must be regarded as of large size; and if it be larger, we should term it *phlyktæna* and *phlyktis*, or, following the Latin phraseology, *bullula* and *bullæ*. The vesicles of the smallest kind are those of ekzema; namely, about half a line in diameter; those of miliaria are as large, and generally larger than a millet-seed, the diameter of the latter being one line; then, above these, we have the large vesicles, the almost *phlyktænæ* of herpes, as large as moderately-sized peas, measuring two and three lines in diameter, and leading upwards to the *phlyktæ* or *bullæ* of pemphigus.

The pathological seat of the vesicle is the same as that of the punctum of hyperæmia or of the prominence of papula,—namely, the aperture of a follicle; and, when a vesicle increases in bulk, it takes in one or more neighbouring pores. Its shape is governed by the degree of resistance afforded by the cuticle, and in some measure by the force of exudation; in the neighbourhood of the hair-follicles, the vesicle is semiglobular, sometimes irregular in outline or angular, in accordance with the figure of the *aréæ* of the lines of motion; sometimes solitary, and sometimes clustered around the opening of the follicle like a row of beads. On

the finer skin between the fingers, where there are no hairs and only perspiratory pores, and where the cuticle is thin and moist, the vesicles are conical in figure; and, under the same conditions, on the trunk of the body and where the hyperæmic base is greater than between the fingers, the vesicles are semiglobular, as in miliaria. These same conditions, and especially the thinness of the cuticle, are the occasion of the brilliant transparency of the conical vesicles developed between the fingers in scabies, and, *par excellence*, of the hemispherical vesicles of miliaria. On the other hand, wherever the cuticle is thick and dense, as on the palm of the hands and the palmar surface of the fingers, the minute effusions of lymph fail in the power of lifting the epidermis into vesicles, but may be seen through the cuticle in the form of transparent globular cavities, and where they are very numerous, they are apt to lift up the entire epidermis of the part; for example, the whole of the palmar surface of an internodial portion of a finger, or a considerable extent of the palm of the hand. At other times, in consequence of the development of vesicles in great numbers, and often in clusters, they blend with each other, and form beneath the cuticle multilocular spaces, sometimes of considerable extent. Vesicles, therefore, may be dispersed or scattered over the skin, when they are termed *discrete*; or, they may be aggregated in numbers, so as to touch each other by their bases, when they are said to be *coherent*; or, they may be still more closely packed and communicate by their cavities, when they are termed *confluent*. An eruption of *ekzema vesiculosum* generally presents all these forms at the same time; in miliaria the vesicles are nearly always discrete; while in herpes, when the clusters are full, there is always some confluence of the matured vesicles.

A vesicle always makes its first appearance in the

immediate circumference of a pore; it may be on one or other side of the pore, or it may form part of a row which surrounds the pore; or if, on the one hand, the pore be small—for example, that of a sudoriferous duct,—or the vesicle itself be moderately large, the vesicle may cover the entire circumference of the pore. In the latter case the aperture of the pore may be seen on the summit of the vesicle; or it may be tilted to one or the other side; and sometimes, by its connection with the sheath of the follicle, it is held down in such a manner as to flatten the summit of the vesicle, or to give the summit an indented, or, as it is commonly termed, an umbilicated appearance.

It must be mentioned, also, that vesicles present some differences in their contents, having reference to their age; at their first appearance the fluid which they contain is limpid and transparent; in the course of a day it is lactescent and opaque, and at a later period it becomes yellowish. Pathologically it is an albuminous lymph, more or less tenacious and viscous, and its opalescence is due to the occurrence of changes in its composition which lead on to the production of pus, and convert the vesicle into a pustule. We have examples of these changes in ekzema, which convert an ekzema vesiculosum into an ekzema pustulosum; we see it also in herpes, and still more strikingly in vaccinia and variola. In both the latter affections the first developed of the primary cutaneous lesions is redness; then follows a papula, hard and gritty to the touch; then a vesicula; and finally a pustule. In miliaria, on the other hand, the change is limited to opalescence, and scarcely ever runs on to the purulent stage. It must also not be forgotten that a vesicular eruption may be subjected to pressure or friction, and that such violence may result in rupture of the vessels of the derma, and the effusion of blood into the vesicles: in such a

case the contained fluid may be pinkish or reddish, or even purplish or black in colour; but the nature of the vesicle remains the same, and this occurrence is only to be regarded in the light of an accident.

Older pathologists were wont to look upon the production of a vesicle as the consequence of a passive transudation of the fluid part of the blood through its vessels; but the distinguished Virchow and his school treat of it as a physiological operation of the cells. According to the former, the serous fluid was poured out upon the surface of the corium, and so lifted the epidermis in totality from off its basimentary bed; but, at the present day, and in conformity with the cell-theory, we look upon the transuded fluid as a product of the rete mucosum, absorbed from the tissues of the corium by the cells of the rete, and exuded from the latter at its surface, so as to break up the connection of the mucous and horny layer of the epidermis, and lift up the latter in the form of a dome. It is also to the functional operations of the rete mucosum that we must look for the explanation of the opalescence of the transparent lymph that first makes its appearance, and of the development of pus-globules and the transition of the lymph into pus, as in some instances occurs.

In speaking of redness as a lesion of the skin, we had occasion to remark that hyperæmia was sometimes followed by exfoliation of the cuticle; the termination of papula is, in general, a thin scale corresponding in size with its inflamed base; but vesicula, as it combines with the hyperæmia of papula the production, besides, of a morbid secretion, gives rise to a more decided and thicker scale, and, in general, to a *crust*. When a sudden outbreak of ekzema vesiculosum, such as the ekzema solare of Willan, quickly subsides, the contents of the vesicles are dispersed, partly by absorption and partly by evaporation, and the separated cuticle

dries up into a thin scale, and is cast off in due season, of a size and thickness scarcely greater than that of papula, excepting in the instance of a coherent or confluent eruption, when the desquamation would be more extensive. Miliaria terminates in this way by a thin and almost inappreciable scale. But when the vesicle lasts longer, and runs through its opalescent to its pustular stage, it is apt, by the desiccation of itself and of its contents, to form a covering of considerable thickness, which is no longer a scale, but a scab or crust. Such are the thick and hard scabs of herpes, firmly and deeply embedded in the skin, at first amber-coloured, then brown, and sometimes black; remaining adherent for a considerable time, and leaving cicatrized pits when they fall off. Of another kind is the crust formed by ekzema, when it assumes a chronic character, and pours out a morbid secretion. In this instance it is not the vesicle which forms the crust, but the secretion exuded from the denuded surface. This secretion is partly serous and partly purulent, and, not unfrequently, it is discoloured with sanguineous effusion: hence the crust varies in consistence, in thickness, and in colour; it may be dense or friable; it may be thick and porous, or laminated; and it may be greyish, or brownish, or greenish, or yellow, reddish, or almost black. Crusts of this kind are met with on the face and scalp in cases of ichorous and pustular ekzema, and especially in ekzema infantile, in that frightful-looking affection termed *crusta lactea*. But *crustæ* will form a theme for future consideration, as being one of the secondary lesions, and we allude to them here, partly in consequence of being a mode of termination of vesiculæ, and partly because we desire thus early to call your attention to the three words, scale, scab, and crust. *Scale* is the thinnest of the three, and may be the separated cuticle alone, or the cuticle in conjunction with a thin varnish of desiccated

albuminous secretion; *scab* is the desiccated vesicle, together with its contents, and sometimes includes a portion of the deeper tissues involved in destruction, as in herpes; while *crust*, however thick and hard, is superficial, and the consequence of the desiccation of morbid secretions. If you look to your dictionary, you will find that a *scale* is a thin lamina, anything that is exfoliated or desquamated; a *scab* is an incrustation formed over a sore by dried matter; and a *crust* is a collection of matter into a hard body.

The pathological lesions of the skin are the alphabet of dermatopathology, out of which we construct words which represent its different diseases. Like the characters of the alphabet of language, they are simple and definite, and may be acquired with the most moderate attention. Nevertheless, though simple, a perfect knowledge of them is essential and important; and we can hope to make as little progress in dermatology without a familiarity with them, as we could in the study of language without an acquaintance with its letters. We have already examined the A, B, and C of dermatopathology, and we proceed, in the next place, to the study of D. A is represented by *redness*; B, by *pimple*; and C by *vesicle*; each, as we have seen, offering to our observation a greater or less variety of type. The fourth on our list of primary pathological lesions is *pustule*; and we have now to inquire upon what features its special peculiarities are founded.

The PUSTULA is a prominence of the epidermis, containing *pus*; in other words, it is a *vesicle containing pus*. From the nature of its contents it is yellow, or yellowish; it is round, generally hemispheroidal, and ranges in size from one to several lines in diameter; its average breadth being two or three lines. The presence of *pus* in or on the skin indicates the existence of a new pathological pro-

cess, one of a graver kind than that which gives rise to a papule or a vesicle,—of a higher form of morbid activity, and therefore one which we must regard, if possible, more seriously than the preceding lesions. In hyperæmia there may be present a diffused exudation, giving rise to general swelling; in papula the exudation is limited and concentrated and more intense; in vesicula, the exudation is the watery part of the blood, very little, if at all, altered in its nature, poured out upon the rete mucosum; whereas in pustula a new product is developed, the pus-globule, by a formative operation, namely by the proliferation of the cell-substance of the cutaneous tissues.

Two things, therefore, must be present to our remembrance in *pustule*, namely, a more or less yellow colour; and the dependence of that colour on a new formation, the pus-globule, which consumes and destroys the normal structure of the tissues in which it is produced. The colour may range from the lightest primrose to the deepest yellow, with every degree of intervening tint; and the pustule itself may be superficial and minute; or, on the other hand, it may be deep and of considerable size, suggesting the comparison with a small abscess. The characteristic primary lesion of ekzema, as you well know, is a minute vesicle; but ekzema sometimes assumes a pustular form, and is then denominated impetigo. If you observe the pustules of impetigo in the course of their development, you will find them to be, in the first instance, vesicles containing a transparent fluid; and this transparent fluid passes more or less quickly into the state of pus. A similar change takes place in the pustule of variola: the primary lesion of variola begins as a punctum or stigma; then becomes a papule; thirdly, a vesicle; and, in the fourth stage only, a pustule: hence, observes Hebra,—“Pustules are among the forms of efflorescence, which

for the most part arise from pre-existing eruptions of a different character, and they therefore do not strictly deserve the name of primary symptoms, of which the distinguishing mark is, that they are caused directly by the original morbid products. As, however, the exudation which precedes the occurrence of suppuration beneath the epidermis frequently escapes notice till it becomes converted into pus, and thus betrays its presence by its yellow colour, it often happens that pustules are the first perceptible morbid appearance; and hence one cannot help admitting them among the primary affections." But we must remember that pus is in reality a primary formation, produced in a totally different manner from lymph; indeed, it is not a mere exudation, but a hyperplastic development occurring in the solid tissues themselves. It does not follow lymph as a modification of that fluid, and therefore as a secondary change; but it is substantially a new and primary formation in a part previously altered by morbid action. It may be a secondary process; but it is a primary lesion; and overlooking these nice distinctions, which are practically of little importance, we may accept pustule without demur, as one of the most striking of the lesions accompanying disease of the cutaneous tissues.

The special characteristics of a pustule result from the varying depth of the tissue implicated in its development: when produced amidst the cells of the rete mucosum, its situation is wholly superficial; the tissue out of which it is formed is easily reproduced, and hence no trace of its presence is left when the skin is restored to health. This is the case in *ekzema pustulosum* or *ekzema impetiginodes*, also in *impetigo*, and in the pustule sometimes accompanying scabies in children. But when the substance of the skin is involved, and the pus is generated at the expense of the connective tissue of the corium, there results a destruction of substance

which is not susceptible of restoration in perfect integrity; and therefore a permanent mark in the form of a pit or cicatrix is left behind. In one of the severest forms of ekzema pustulosum that may be presented to you, such as occurs on the face in ekzema infantile, and gives rise to the hideous-looking mask of crusta lactea or ekzema larvale, you may without hesitation predict a perfect immunity from cicatrix; whereas, in some other forms of pustule, and especially in variola, you know that the cicatrix is indelible, and must remain for ever as a permanent deformity.

A superficial pustule, or vesico-pustule, is very generally unaccompanied with any special hyperæmia or alteration of the derma; but a deep pustule is always produced upon a hard and more or less congested base; the pustule of impetigo is an example of the superficial kind; that of ekthyma, of the deeper sort. This distinction was appreciated by the ancient Greeks, who styled the pustule without the inflamed base, *psydrakion*, meaning thereby a cold or non-inflammatory blister or pustule; and that with the inflamed base, *phlyzakion*, from *phluzein*, to be hot, a hot or inflammatory blister or pustule. Willan's definition of "pustule" is,—“An elevation of the cuticle, sometimes globate, sometimes conoidal in its form, and containing pus, or a lymph which is in general discoloured. Pustules are various in their size, but the diameter of the largest seldom exceeds two lines.” He indicates four kinds of pustules, which he terms—*phlyzakium*, *psydrakium*, *achor*, and *phlyktis*. *Phlyzakium* is, as we have just informed you, the pustule with the inflammatory base represented by ekthyma; *psydrakium*, the pustule without inflammatory base, namely, impetigo; and *achor*, a pustule peculiar to the follicles of the scalp. *Phlyktis* we no longer regard as a pustule, but as a large vesicle or small bulla.

The classification of pustules regarded as a pri-

mary lesion of the skin, is very restricted; limited, in fact, to impetigo, ekthyma, and achor; but besides these we have numerous instances of pustule presenting the character of a secondary lesion; for example, akne and sykosis, wherein the follicles are principally concerned; herpes, variola, gutta rosea, furunculus, hordeolum, lupus, and pustular dermatosyphilis, the pustules in all these cases having the ekthymatous type, that is to say, being developed on a hard and inflamed base.

We have said that the typical colour of pustule is yellow, but a yellow varying in tint in accordance with the degree of concentration of the pus. When the preponderance is in favour of lymph and mucous cells, the colour is pale, milky, or primrose; while in the case of excess of pus-globules, the depth of yellow increases to a golden and sometimes to a greenish tint, the greenish hue being referrible to an admixture with the pigment-matter of the blood. When pustules are bruised, or when their dermal base is highly congested and weak, blood is apt to be mingled with the pus in various quantity, and thereby to communicate a purplish and sometimes a livid hue to their contents. These remarks are applicable also to the scab or crust which results from the desiccation of the pustule; it may be amber-coloured, or reddish-brown, or a deep black.

A pustule left to its normal course terminates by desiccation of its contents, accompanied with a shrinking and corrugation of its vesicle, and the formation of a dense and hard *scab*, which, according to the depth of tissue involved in its production, either rests lightly on the surface, or is more or less deeply embedded in the skin. The scab produced by the pustule of impetigo is quite superficial, and leaves no mark or cicatrix when it is shed; but the pustule of ekthyma, as it sinks more deeply into the substance of the skin, and destroys the papillary layer of the derma, which cannot be restored, is fol-

lowed by a pit and by a cicatrix of life-long duration. But the pustule not unfrequently bursts, or is broken accidentally, and then, the pus being set free, dries upon the denuded surface and forms a *crust* of variable extent; and the crust may be modified in colour, in thickness, and density, by a variety of conditions. The yellow crust of impetigo suggested to the Greeks the term *melitagra*, from *meli*, honey, in consequence of its resemblance to dried honey; while the mask-like crust of ekzema impetiginodes or ekzema pustulosum of the face and head, called also *crusta lactea*, and *porrigo larvalis* or *ekzema larvale*, is very commonly greyish or greenish, and generally, from admixture with blood, in parts brown and even black. When, however, the pustule is broken, the exposed surface sets up a secreting process, which results in the production of a quantity of discharge, which may be principally purulent, or only partially purulent, and the density of the secretion will be the occasion of a difference of density of the crust, the pure pus producing the most dense form of crust, and that which is diluted with serum, producing one which is spongy and light, and probably of considerable thickness.

Therefore, in the consideration of pustule we have not only to bear in mind its manner of development, its colour, and its contents, but also its mode of disappearance. It will very probably leave behind it indelible signs, by which the disease to which it belonged may be recognized to the end of life; such, for example, is the cicatrix of the vaccine pock, the cicatrix of variola, the cicatrix of lupus, and also that of dermatosyphilis.

The pustule also brings before us another phenomenon which deserves our attention. We have said that pretty constantly, it is preceded by an exudation of lymph: hence we have to consider, as belonging to the process of pustule-formation, a lympho-genesis as well as a pyo-genesis: but there

is present besides, another operation, namely that by which the pus is circumscribed and limited to the spot in which it is produced: this is effected by a kind of hypertrophy, or hyperplasia, of the connective tissue, which gives rise to a wall or cyst by which the pus is surrounded. There are consequently three different forms of manifestation of the morbid process, which may very possibly represent degrees of force, or stages of diseased action, present in the development of a simple pustule. There is the force which occasions the primary lymph-exudation; the pus-globule-generating force; and the circumambient wall-producing and limitary force. In noting these phenomena we have an explanation of the *plus* or *minus* of the three elements of the pustule-forming process; of the preponderance of lymph in one case, of pus-globules in the other; of the production of pus or pustules at one point, of lymph or vesicles at a neighbouring point; and we have also an explanation of the nature of a phlyktænoid or vesicular pustule that not unfrequently shows itself in children possessing a weak and delicate skin, namely, *impetigo phlyktænodes*. This form of eruption begins as a pustule; but, the limitary process being weak, the morbid action creeps for a small space into the surrounding tissue, and wanting the pus-generating force, throws out an exudation of lymph and produces a vesicle. Hence, we find developed a kind of compound lesion, a phlyktæna possessing the compound character of a pustule at the centre and a vesicle at the circumference; the vesicular elevation being sometimes a circle of coherent vesicles, and sometimes a single circular or annulate vesicle.

BULLA, or bleb, or blister, the *pemphix*, *pomphos*, and *pompholux* of the Greeks, is a large vesicle, identical in structure and contents with a vesicle, developed in a similar manner, and running a similar course. Its chief characteristic is size; hence, in

the language of Willan, it is "a large portion of cuticle detached from the skin by the interposition of a transparent watery fluid." Or we may regard it as the superlative degree of vesicle, the positive degree being vesicula, and the comparative, phlyktæna or phlyktis. The *size* of the bulla may range from that of a large pea to that of an egg or an orange; in *figure* it may be hemispherical or globular, sometimes oblong, sometimes crescentic, sometimes tense, shining, and transparent, and sometimes wrinkled and opaque. While its *contents*, which are usually clear, transparent, and colourless, like water, may be amber-coloured or purplish, without loss of transparency; or they may be opaline or lactescent, or yellowish, or purplish, and opaque.

The development of a bulla is sometimes a specific action of the skin, accompanied with a specific hyperæmia, as in the instance of pemphigus; and sometimes, as in erysipelas, a secondary process resulting from a previous state of œdematous infiltration of the cutaneous tissues, and acting the part of a drain to the accumulated fluid. In both instances the contents of the bulla are the same,—a serous fluid, albuminous and moderately alkaline, and sometimes holding in solution bile-pigment, and occasionally urea and uric acid; while its seat is the epidermis between the corneous layer and the rete mucosum. When of large size, it begins by several small vesicles, which quickly unite; and having increased to a considerable bulk, the circumference creeps along the surface, taking in more and more of the surrounding skin. It is this creeping quality that constitutes the chief distinction between vesicula and bulla; the former being fixed and rarely increasing by its base; the latter running along the surface to a more or less considerable extent. The bulla likewise is sometimes deficient in areola and sometimes surrounded by a narrow streak of redness.

The period of duration of a bulla is several days; very frequently it rises up in the course of a few hours, or it may increase gradually during several days; and having completed its development, it is either broken, or its fluid evaporates, and the containing sac of cuticle becomes wrinkled and collapsed, and subsides by degrees upon the excoriated base. In this way it forms a thin crust, which remains adherent for a while, and exfoliates in the form of a scale; at other times the excoriated base is converted into a secreting surface, and a thicker crust is produced, sometimes greyish or brownish, and sometimes almost black from admixture with blood.

As an idiopathic affection, bullæ are met with in pemphigus and pompholyx; and symptomatically in erysipelas, in dermatosyphilis constituting rupia, in pernio or chilblain, and in elephantiasis anæsthetica. They are also produced artificially in burns and scalds, and by the application of epispastics.

SQUAMA or scale, in a general sense, is a lamina of cuticle separated from the surface of the skin; but in its special character of a primary cutaneous lesion, the term is intended to signify, in the language of Willan, "a lamina of *morbid* cuticle." A desquamation of cuticle or exfoliation of cuticular scales, taking place after a previous state of hyperæmia of the skin, as in scarlatina or measles, is necessarily a secondary lesion: but our business at present is to fix your attention upon a *primary squama*, such, in fact, as accompanies lepra; the secondary squamæ shall be considered hereafter. If we have the good fortune to see a case of lepra at its earliest appearance, we shall probably discover papulæ in no respect differing from the papules of leichen. It may be uncertain whether the lesion will remain a papule, or whether it may become a vesicle or a pustule; but in a short time,

sometimes in a few hours, a white glistening cap of altered cuticle appears on the summit of the papule; and we are enabled to recognize the first development of a squama.*

The *primary squama* is therefore a lamina of morbid cuticle, and the chief example of the lesion is met with in the *lepra alphos* of the Greeks, the *lepra vulgaris* of Willan, the misnamed "psoriasis" of the foreign schools. The squama of lepra is a portion of cuticle developed upon a base of morbid derma, and as a consequence, is itself a morbid product. Its abnormal characters are, its whiteness,—hence the term *alphos* (*albus*), its porosity or sponginess, its opacity, its laminated structure, its dryness, its friability and brittleness, and its tendency to be cast off or shed; the whole of these qualities being referrible to imperfect elaboration of the cell-elements of the epidermis. The cells retain more of the albuminoid than of the corneous character; they are turgid with serous fluid; and when subsequently they are desiccated by evaporation, the spaces previously occupied by fluid become filled with globules of air: hence arise the lightness, the sponginess, and the silvery brilliancy of the scales.

The squama of lepra ranges in *size* from a line to an inch or more; it is generally circular in *figure*, and from half a line to a line in thickness. The circular disk is depressed in the centre, which is more dense and horny than the rest; farther from the middle point it is thick, spongy, and laminated, and at the extreme periphery presents the thinness of a single lamina. The first-produced scale is always the most complete, and when removed, its place is usually taken by several smaller and less perfectly constructed laminæ. Like all morbid tissues, it presents varieties bearing relation to its

* *Vide Alphos punctatus and Alphos papulosus, JOURNAL OF CUTANEOUS MEDICINE, vol. i. pp. 209 and 114.*

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greater or less divergence from the normal standard; sometimes it is as thin as the scales of bran, suggesting the term pityriasic; sometimes it is almost horny; and sometimes it is irregular in figure, from the unsymmetrical blending of the several papules or tubercles on which it is produced.

But besides the scale of lepra there is another form of scaliness which deserves to be considered as a primary lesion; namely, the flaky and pulverulent desquamation which accompanies *phytosis versicolor*, the pityriasis versicolor of Willan. In this disease, as in lepra, there is a degeneration of structure of the epidermic cells; they possess a granular character; and thence the cuticle which they form is loose and porous, easily separable from the layers beneath, and, upon scratching or friction, breaking up into small flakes and powdery fragments. This breaking up of the cuticle is supposed to be due to the destructive operation of a vegetable parasite, the microsporon furfur; certainly it is the consequence of a phytiform growth, or a phytiform degeneration of the cell-structure of the epidermis, but we are unwilling to regard the granular elements of which the desquamation is composed, as an independent vegetable organism.

The scale of lepra, beginning at a central point, increases by the circumference, creeping slowly over the surrounding skin; hence it happens that the centre of the disk is much older than the circumference; hence, also, the greater density and thickness of the central portion than of the border; and hence also the imbricated appearance of the surface of the scale. Its adhesion to the surface beneath, although occasionally firm, is generally very slight; hence it is easily rubbed off by the friction of body-clothes or bedclothes, and when it is removed, it exposes to view the red and prominent surface on which it was produced, the latter being invested with a thin layer of transparent cuticle.

TUBERCULUM, literally a little tuber or tumour, or tubercle, is a solid prominence of the skin, larger than a papula and smaller than that greater or more extensive prominence which is denominated tumour. The difference between papula and tuberculum is simply one of bulk; and the same between tuberculum and tuber: hence a point exists, when we may be in doubt whether to term an eruption, one of large papulæ or small tubercles; and, on the other hand, whether large tubercle or small tumour. In determining the size of an ordinary papule, we stated its breadth to be one or two lines; and of a large papule which might under certain circumstances be considered as a tubercle, to be three lines, that is, a quarter of an inch. So, in fixing a limit to the size of a tubercle, we may start with a quarter of an inch, and allow of a progression of another quarter of an inch; thus estimating its size at a quarter to half an inch in diameter. Hebra's estimate of the size of a tubercle corresponds with this. It is, he says, "as large as a lentil, bean, or hazel nut."

The resemblance of papula and tuberculum is not altogether one of similitude only: a papula by growth may reach such a size that it would be more correct to term it tubercle than papule. As a papule, its seat might be limited to a single cutaneous follicle, whereas the implication of two or more follicles would constitute a tubercle. This we see illustrated in lepra, which begins as a small pimple, and spreads out to a breadth which entitles it to the denomination of tubercle. In lupus we often perceive a similar phenomenon, but the transition of papula into tubercle is most remarkably shown in dermatosyphilis; a first eruption of constitutional syphilis is generally one of erythema and stigmata; the second will be one of papulæ, and receive the name of leichen; while a third or fourth, or a subsequent evolution of the disease at the stage termed tertiary

syphilis, will be a tubercle: this latter is the form of eruption which is so commonly confounded with that other tubercular affection, lepra, and which we see described, but very incorrectly, by the name of lepra syphilitica and psoriasis syphilitica.

Willan's definition of tubercle leaves little room for improvement:—"A small, hard, superficial tumour, circumscribed and permanent, or suppurating partially"; and if we turn to his examples of the lesion, we find phyma, verruca, molluscum, akne, sykosis, lupus, elephantiasis, and frambœsia; we omit vitiligo as having crept into the group in error.* Phyma includes the family of boils or furunculi, and also anthrax; but it will at once occur to you that certain furunculi deserve to be termed tumour, rather than tubercle, while anthrax or carbuncle is a decided tumour. Molluscum, again, not unfrequently reaches the bulk which is correctly expressed by the term "tumour." On the other hand, as far as mere size is concerned, akne and sykosis are instances of pimples rather than of tubercles. But Willan, in the latter part of his definition, namely "suppurating partially," points out a special character by which he endeavours to distinguish papulæ from tubercula; the papulæ of Willan, namely, leichen, strophulus, and prurigo, have no disposition to suppurate—their habit is to subside and disappear; but the papulæ included under the head of tubercula have a suppurative propensity,—for example, akne and sykosis.

Tubercles present some variety of seat, of elevation, of colour, figure, and density. They may be situated on the skin, or in the substance of the skin; they may be very slightly or very considerably elevated; they may evince no departure from the normal tint of colour of the integument, or they may be red or white, yellow or purple, or livid or

* *Vide* JOURNAL OF CUTANEOUS MEDICINE, vol. i. p. 108.

black; they may be round or oblong, annulate or crescentic; and they may be dense or soft, solid or hollow, homogeneous or filled with fluid contents. The family of verrucæ and tegumentary nævi occupy the surface of the skin; lepra and some of the dermatosyphilitic eruptions, its papillary layer; while tubercles formed by enlargement of the sebiparous glands are *situated* for the most part in the substance of the corium, as are the various forms of hypertrophy, for example, lupus, cheloma, and the tubercles of elephantiasis. The tubercles of urticaria, of dermatosyphilis, and lepra, are sometimes scarcely raised above the level of the skin, and their *prominence* is discoverable by the touch rather than by the eye; the tubercles of akne, sykosis, cheloma, verrucæ, and tegumentary nævus, sometimes reach one or two lines in elevation; and those of elephantiasis, molluscum, and furunculi, are often still more prominent. The *colour* of tubercular prominence caused by tegumentary nævus, by the enlargement of sebiparous glands, and sometimes by cheloma, in nowise differs from that of the healthy integument; the tubercles of molluscum adenosum, of sebaceous accumulations, of epithelioma, and cheloma, are sometimes white; the tubercles or wheals of urticaria are generally white or yellowish; other tubercles, such as those of dermatosyphilis, of lepra, of akne, of sykosis, of furunculus, and of elephantiasis, are more or less deeply red; while in a torpid or congested state of the circulation the red deepens into purple, and even into livid; and in pigmentary nævus, and where melanosis infects the skin, the tubercles are black. The *figure* of tubercles is commonly round, but the wheals of urticaria very frequently present elongated ridges or stripes, and sometimes segments of a circle. The tubercles of declining lepra are often annulate, as are those of tubercular dermatosyphilis, and occasionally they appear in the form of segments of a circle and semilunar curves. The

density of tubercles is influenced by their solid or hollow texture, by the nature of the tissue involved, and by the contents of their internal cavities when such exist. The tubercles and wheals of urticaria are sometimes soft and sometimes hard to the touch; the tubercles of cheloma are firm and resisting, sometimes as rigid as cartilage; the tubercles with contents are sometimes hard and sometimes soft; the tubercles of common verrucae are firm and harsh, while those of akrochordon and molluscum areolo-fibrosus are loose and compressible.

The proximate cause of tubercles presents the same kind of variety that we have already seen manifested by papulae; sometimes the prominence is dependent on muscular spasm, as is the case with the wheals of urticaria; sometimes the enlargement proceeds from interstitial infiltration and hypertrophy, as in lepra, dermatosyphilis, and elephantiasis; sometimes from accumulation within the cavities of glands, especially the sebiparous glands, as in molluscum adenosum, and sebaceous tubercles; sometimes from a combination of both the latter processes, as in akne; sometimes from hypertrophy of tissue, as in cheloma, naevus hypertrophicus, akrochordon, molluscum areolo-fibrosus, and verruca; and sometimes from degeneration of tissue, as in some forms of dermatosyphilis, in lupus, and carcinoma.

TUBER, or tumour, the *phyma* of the Greeks, is a swelling of the skin, larger than a tubercle, and embracing every degree of dimension, from half an inch to many inches in diameter. Hebra compares the maximum size of a tubercle with a hazel nut, and the minimum size of a tuber with a walnut. In tuber, tuberculum, and papula, we have presented to us a comparative series of enlargements, as we have before seen to be the case in the instance of vesicula, phlyktæna, and bulla; and in both instances the determination of the class to which a

given enlargement may belong must be left to the judgment of the observer.

The most familiar example of a tuber that we can present to you, is the *tumor cysticus*, the encysted tumour or wen, which may be so small as to fall within the category of tubercle, or, on the other hand, may be as large, or larger, than a man's fist, a common average size being one inch in diameter. The observation of encysted tumours shows us that tumours may be only slightly or very boldly prominent, hemispherical, and sometimes spherical with a pedunculated base. The seat of an encysted tumour is a sebiparous gland and excretory follicle, and its contents the epithelial and secreted product of that gland; hence the tumour may be hard or soft, in proportion to the solidity or fluidity of its composition, and the skin covering it may be unchanged in appearance; it may be attenuated until it assume the appearance of parchment, or it may be reddened or purplish, from hyperæmia or congestion.

Other examples of phymata are, the common boil, the carbuncle or anthrax, hypertrophic conditions of the cutaneous and subcutaneous areolo-fibrous tissue, as in molluscum simplex and some local forms of spargosis, and degenerations of tissue, such as the tumor gummatous of syphilis or syphiloma and the tubera of lupus and carcinoma. A glance at these examples will show you that as some take their origin in inflammation, some in accumulation of secreted products, some in hypertrophy of tissue, and some in neoplasma or new formation, the physical characters of the tumours must be as varied as their pathological structure. Hence the tuber may offer as great a range of variety in physical signs as the other lesions of its class, namely, the papulæ and tubercula; it may be prominent in a greater or less degree, and it may present every degree of colour and density.

MACULA, a spot, a stain, a mark, is the simple

signification of this term when applied to the diagnosis of a lesion of the skin. It is the ninth of the lesions to which we have drawn your attention, and it is unlike all the rest in being independent of inflammation or of inflammatory processes. Willan defines *macula* as "a permanent discoloration of some portion of the skin," and Hebra includes under it "every change in the normal colour of the skin arising from disease." We have a homely illustration of maculæ in the yellow spots of lentigo or freckles; and we find further illustrations in the purple spots and marks of purpura; in the red, the blue, and the black spots of nævus; and in pigmentary discoloration in general; for example, in the melasmata, the chloasmata, and also in leukasmus. The majority of these maculæ are in reality "permanent," as intimated by the definition of Willan; but the maculæ of purpura are only temporary: hence possibly the word "stationary" would be better than "permanent," as expressive of a more fixed character than that which belongs to the transient hyperæmiæ and inflammations, and yet falling short of the idea which is conveyed by the word "permanent."

Colour is one of the first of the features that attract our attention when entering upon the consideration of maculæ; then follow, *figure*, *extent*, and *pathological nature*. Their colour is sometimes due to the blood, which gives us varied tints of red, of purple, of livid, or black; sometimes to the accumulation of pigment in the rete mucosum, which contributes various hues of yellow, brown, grey, and black; and sometimes to the absence of pigment, as in the various examples of achroma. In vascular nævi, the blood is contained in a plexus of minute vessels, and the colour of nævi may be scarlet or crimson, as in arterial nævi; or purple or livid, as in venous nævi. Whereas in purpura the blood is effused from the vessels into the tissues, is

crimson at first, then purple, and afterwards black, before it undergoes its retrogressive or fading changes; and finally the spot loses all claim to permanence by disappearing completely. The distinction between *nævus* and *purpura* affords us an additional lesson; the one being due to blood contained in pervious vessels, is dispersed by pressure, but the colour returns as soon as the pressure is withdrawn; the other, depending on extravasated blood, remains unaltered however much pressure be exerted, and becomes even more conspicuous from the contrast of the coloured mass with the whiteness of the compressed skin. In *maculæ* due to abnormal pigmentation, the colour is seated in the *rete mucosum*, and the tints may range from the yellow of *xanthochroia*, *xanthelasma*, and *lentigo*, through the yellowish-green and yellowish-brown of *chloasma*, to the deep brown, the grey, and the black of *spilus* and *melasma*. While the absence of pigment from the *rete mucosum* may give rise to *achroma* or *leukasmus*, and the same may occur from destruction of the *rete mucosum*, as in *maculæ atrophicæ*. The pigmentary *maculæ* are truly permanent, and undergo no change of colour under pressure.

The *figure* of *maculæ*, for the most part circular or oval, as in *lentigo* and the *petechiæ* of *purpura*, may present itself in the form of stripes, as in *vibices*, and *lineæ atrophicæ*; they are sometimes circular or annulate in *elephantiasis*; and islet-shaped or irregular in *chloasma* and *melasma*. And in point of *size* they are apt to exhibit infinite variety, ranging from a mere point in *lentigo*, to a patch of considerable extent in *melasma*.

The pathological nature of *maculæ* we have already anticipated in grouping them, primarily, into such as are due to the blood, and such as are due to the presence or absence of pigment; in the

former section distinguishing between the blood *in* the vessels and the blood *out of* its vessels. In the latter section, we may further note the difference between a normal and abnormal state of the rete mucosum, and a positive absence of the true seat of colour of the skin, the rete mucosum, as in *maculæ atrophicæ*.

And now, in concluding the subject of *primary lesions* of the skin, let us devote a few minutes to a recapitulation of the chief points of practical interest which their investigation suggests. These lesions have sometimes been termed *anatomical*, but we believe that you will agree with us in opinion, that they are no more anatomical than is tubercle of the lung, but, on the contrary, that they are essentially *pathological*. The chief value of the pathological lesions is their direct bearing on *diagnosis*, and their adaptability to the determination of the nature of a disease. And therefore we wish you to put yourselves in the position of an inquirer seeking to distinguish a disease of the skin which may be purposely brought before him. What is the most prominent lesion that meets your eye? Is it *rubor*? then the case must be one of hyperæmia, maybe an erythema, a roseola, the first stage of a zymotic exanthem, or an erysipelas. Is it *papula*? then you have before you a leichen, a prurigo, an ekzema papulosum, or what may be termed an accidental papula, such as akne, sykosis, a sebiparous hypertrophy, or a sebaceous accumulation. No; the prominence is too large for a papula; it must therefore be a *tubercle*, a tubercle of urticaria, of lepra, possibly a strumous, or carcinomatous, or elephantous, or syphilitic tubercle; a tubercle from accumulation of secretion, like molluscum adenosum, or a tubercle from hypertrophy of tissue, such as molluscum areolo-fibrosus or cheloma. Are you still doubtful in reference to magnitude? Then the enlargement is a *tumour*, perchance a furunculus,

an anthrax, an encysted tumour, a molluscum areolo-fibrosum, a spargosis, a cheloma, or a syphiloma. How many diseases we have already passed in review,—indeed, we have omitted some,—and as yet we have taken under our consideration only *four* lesions, or if you please, merely *two*; for as we have already shown, a tubercle and a tuber are nothing more than magnified papulæ.

Or perhaps the pathological lesion is a minute drop of transparent serum enclosed in a thin case of cuticle,—in other words, a *vesicle*. Then you have before you an instance of ekzema, of miliaria, or maybe of herpes. Or, the vesicle, stretching beyond its accustomed limits, is a bleb or bladder rather than a vesicula, in truth is a *bulla*; and then the case is one of pemphigus. Instead of serum, the vesicle possibly contains pus, and so constitutes a *pustula*; the pustule is minute, a mere vesicle filled with pus; in that case it is impetigo; no, it is large, with a hardened base and involves deeper structures, then it must be ekthyma; perchance it is a pustule of lupus or syphilis, and may result in an ulcer; or it is seated on the scalp, occupying the hair-follicles, which seem for the nonce converted into fountains of slimy pus, in which case it is a kerion; on the face or back it may be a pustular akne; on the face alone, a pustular gutta rosea, or on the hair-bearing parts of the face, a sykosis or mentagra.

But that which attracts your attention is neither rubor, papula, vesicula, nor pustula, neither is it tuberculum, tuber, nor bulla; it is a white scale that looks like a fragment of wafer stuck upon the skin,—it is, in fact, *squama*, and the disease is lepra; and you must guard yourselves at this point, against confounding a laminated scale of morbid cuticle like that of lepra, with a mere exfoliation or desquamation of normal cuticle. It is possible that with desquamation, there may be a yellowish and

reddish-brown or greenish discoloration of the epidermis, and the patches may be distributed map-like on the trunk of the body and bends of the neighbouring joints, in which case the disorder will be the pityriasis versicolor of Willan, or, named more in accordance with modern knowledge, phytosis versicolor. Finally, Gentlemen, we need not again remind you of the distinguishing characters of *macula*, of its spots and stains, of its varied colours and varied forms, and especially of the absence of inflammation, which directly or indirectly is present in all the other lesions. But we will ask you to transcribe and commit to memory the table which we have here set before you.

Rubor	...	...	...	...	Pustula.
Papula	{	Tuberculum	...	...	Squama.
		Tuber	...	...	
Vesicula,		Bulla...	...	...	Macula.

The diagnosis of cutaneous disease differs in no respect whatever from that of other diseases; just as we determine the presence and nature of disease in general by its symptoms, so symptoms or signs, or as we term them *lesions*, are the characters by which we distinguish the presence and nature of diseases of the skin. And it must be remembered that symptoms or signs are not the properties of disease alone, but that they belong equally to health. By the bedside or in the consulting-room, it is as necessary to be able to appreciate the signs of the skin of health as those of disease; and this kind of knowledge is applicable, not to the skin only, but to the state of health of every part of the economy.

We have shown that the principal signs of disease of the skin may be embraced under *six*, or, if you prefer it, under nine heads; and to these heads we assign the term *lesions*: thus there is *redness*; then there is prominence in the three degrees of *papula*,

tuberculum, and *tuber*; then there is the uplifting of the epidermis by the effusion of serous fluid, constituting *vesicula* and *bulla*; next, the uplifting of the epidermis caused by the accumulation of pus, namely, *pustula*; then a state of abnormal formation of the epidermis, or *squama*; and sixthly, an alteration of colour of a persistent character, or *macula*. Let this, Gentlemen, be your first lesson in diagnosis, and we will ask you to study it well, for in it you have a key to the knowledge of every disease of the skin and many of those of the general system. The expert will tell you off a disease at a glance, but it is only through this process of examination, developed by experience into an instinct, that he has arrived at the extraordinary facility which he seems to possess. We not only call the signs which we have just been describing, lesions; but we also distinguish them as *primary lesions*, that is to say, as the first and earliest appearances of disease; and not only the first and earliest appearances, but also as the complete signs by which, without other help, we can determine the diseases to which they belong. But the primary lesions are very rarely permanent, and in most instances they are little more than the primary stage of a secondary change; or they are the exciting cause of certain secondary phenomena; hence, it becomes our duty, in the next place, to study these secondary signs, or as they are commonly denominated, *secondary lesions*. To illustrate briefly the nature of secondary lesions, let us run again over the primary lesions, and consider in what way they may be capable of operating secondary changes. Rubor or redness, is a hyperæmia; the causes which sustain hyperæmia will very probably arrest the nutrition of the epidermis, the horny layer of the epidermis will separate from the rete mucosum, desiccate and exfoliate; this constitutes the secondary lesion, *desquamation*. Papula is remarkable for its itching propensities, so much so

that one instance of the lesion is termed prurigo; itching leads to rubbing and scratching, the heads of the pimples are torn off, and then we have an example of the secondary lesion, *excoriation*. Vesicula, besides the surface-effusion or exudation, which gives it its specific character, is accompanied with a tissue-exudation or œdema, and a persistence of tissue-exudation leads on to the secondary lesion, *induration*. Pustula consists essentially in the development of a new pathological product; that product by drying upon the surface constitutes a scab or crust: hence the secondary process, *incrustation*. Tuberculum and tuber are apt to run on to solution of continuity, and so to give rise to the secondary phenomena, *fission* and *ulceration*; and, consequent upon ulceration, to *cicatrization*. Squama, and sometimes macula, results, like rubor, in desquamation; and rubor, or hyperæmia, is very commonly succeeded as a secondary change by *discoloration*. The secondary lesions, therefore, that we have now to consider, we have arranged in the tabular scheme to which we direct your attention, and we shall pursue their further consideration in the order in which they are here set down, namely:—

Desquamation,	Fission,
Induration,	Ulceration,
Incrustation,	Cicatrization,
Excoriation,	Discoloration.

DESQUAMATION, that is, the spontaneous separation of the epidermis from the derma, is a very common and usual consequence of hyperæmia of the skin, and presents some variety of manifestation having reference to the acute or chronic nature of the hyperæmia, its depth, and its extent; and also in respect of the cuticle itself, which may be normal and healthy, or may be abnormal and morbid. The general hyperæmia of the zymotic exanthemata,

namely, scarlatina, rubeola, and variola, is followed by an *universal* state of desquamation: the corymbose exanthem of dermatosyphilis erythematosum is *general* without being universal; while desquamation of a limited affection, such as erysipelas or ekzema erythematosum, is necessarily *partial*. In general and acute hyperæmia, the arrest of nutrition of the epidermis which determines its fall is sudden and extensive; hence the cuticle is thrown off or exfoliates in broad or membranous sheets, and of a thickness corresponding with the region of the body in which the exfoliation occurs; these sheets will be thin and pellucid on the trunk of the body and limbs, and thick on the palm of the hands and sole of the feet; and the size of the sheets will be influenced by the thinness or thickness of the exfoliated layer, and, in some measure, by the conditions of the part and the treatment it may have undergone. It is no uncommon thing to find the cuticular sheath of a finger or of a toe, or indeed of the entire hand or foot, cast off after scarlatina, and, *ceteris paribus*, the size of the sheets will be proportioned to the degree of repose, and probably to the neglect experienced by the patient. In chronic hyperæmia, the arrest of nutrition is irregular and intermittent, and the desquamation partakes of a similar character; the epidermis is no longer cast off as a single and continuous sheath like the slough of a serpent, but is broken and subdivided, and takes a shape corresponding with the figure of the part on which it occurs, or assumes the shape of the inequalities of the morbid skin on which it is produced. Hence, time out of mind, dermatologists have distinguished, besides the *membranous* desquamation or exfoliation already referred to, a *furfuraceous* and a *farinaceous* desquamation, to which Hebra has added a modification of the membranous desquamation, namely, a *siliquous* desquamation.

Furfuraceous desquamation, derived from *furfur*

and *furfures* bran, in other words, branny desquamation, is composed of particles which are compared to scales of bran, and the particles may be said to range in size from that of the finger-nail down to a minute, spangle-like, and micaceous film. Farinaceous desquamation, from *farina*, meal, or mealy desquamation, on the other hand, includes every form of pulverulent or powdery and amorphous disintegration of the cuticle, and may exist independently or may be associated with furfuraceous desquamation; in certain parts of the body where the skin is coarse you may expect to find the former; in other parts, as in the flexures of the joints, the latter form of desquamation. And siliquous desquamation, from *siliqua*, a pease-cod, is especially applicable to the desiccated oblong or crescentic domes of the bullæ of pemphigus.

Scales, in their nature, being portions of cuticle separated from its natural bed, may present some variety having relation to the degree of healthiness of the epidermis; if we produce an artificial bulla upon the healthy skin, the scale which will result from the separation of the bulla after its desiccation will necessarily consist of a fragment of healthy epidermis; the same may be said of the desquamation consequent upon the irritation of a blister, of the desquamation following the exanthematic fevers, erysipelas, pemphigus, and ekzema. It is possible that the scale may have been more or less completely saturated with the discharges which have exuded from the inflamed skin; but the cuticle itself is normal in structure, and none the less so because it is capable of becoming the medium of transmitting infection from one person to the other, as in the case of scarlatina. But the scale of lepra is not a lamina of healthy cuticle, it is composed of unhealthy and morbid cuticle; and so also is the exfoliation which is cast off from the mottled surface of phytosis versicolor. Hence, even a scale may afford material

of observation that will aid us in the diagnosis of cutaneous disease. Place before yourselves the transparent crumpled film of a fragment of exfoliated cuticle; by the side of it the furfuraceous, glistening lamina produced by a chronically inflamed derma; and again, the morbidly composed and opaque shred of *phytosis versicolor*, or the elaborate, laminated and imbricated scale of *lepra*, brilliant in its snowy whiteness, and you will have under your eye structures that can hardly be regarded as the same, except through a knowledge of their source.

There are few things more striking in their contrast than the scales of *lepra* and those of chronic *ekzema*; the same may be said of the minute, shining, micaceous, bran-like scales that have given a name to *pityriasis capitis*, as compared with the ragged, spongy, dull, and uneven films of *phytosis versicolor*. So that even the form of desquamation may help us in our diagnosis. If we apply this test to the so-called *lepra syphilitica*, we shall discover at once that the specific scale of *lepra* is wanting, and that the ragged exfoliation from the surface is in nowise dissimilar from the one which accompanies ordinary hyperæmia. We are led by these observations to the conclusion, that that which we call a scale is, one while, nothing more than a separated or partially separated lamina of normal cuticle continuous by its border with the rest of the cuticle; and, another while, like the scale of chronic *ekzema* or *pityriasis*, a lamina produced as a scale from its earliest formation, and separated by its circumference before it is set free from its central attachment.

The thickness of a scale is sometimes governed by the situation in which it is produced; sometimes by the formative energy of the inflamed part. The scales of *pityriasis capitis* are extremely thin and small, and are produced and thrown off with remarkable celerity. In some forms of *pityriasis*, such as that which occurs upon the face of children, the desquama-

tion is farinaceous rather than furfuraceous; in xeroderma it is amorphous, and in some parts farinaceous; on the palm of the hands and sole of the feet it consists of thick yellow laminæ of desiccated cuticle; and on the heel we have seen it assume the character of a rugged horny mass, three-quarters of an inch in thickness. The most remarkable example of desquamation is that which is met with in the pityriasis rubra of Devergie and Hebra. The exfoliation is produced from every part of the body, the skin looks feathered with shreds, and in the course of a week, as much as half a pound of cuticular squamæ have been collected from the patient.

EXCORIATION of the skin is marked by the exposure of the derma or of the deep layer of the rete mucosum, by the removal of the epidermis; such removal being the consequence of abrasion, or effusion beneath its surface. The example which we have selected as the type of excoriation is leichen and prurigo, a papular eruption which produces so much itching that the nails are almost involuntarily brought into requisition, and the surface is more or less torn; but we might also have instanced the dry forms of ekzema, and especially ekzema papulosum and squamosum; the tubercles of lepra; the hyperæmia of knidosis or urticaria; the irritation of the acarus in scabies, or the neurotic irritation of pruritus.

Next to the excoriation produced by the nails we may instance the abrasions of surface which result from friction and some chemical substances, such as strong alkalies; and the excoriations which are brought into view by the rupture of vesicles or the accidental wiping away of loosened cuticle softened by secretions; and the excoriated network of lines occasioned by the swelling of a portion of skin affected with ekzema. Where the excoriation is accomplished by the nails on an otherwise normal tissue, the tears of the surface are indicated by streaks or scratches, which are sometimes red and

bleeding, sometimes black from the desiccation of effused blood, and sometimes brownish red from the formation of a linear scab or from the removal of such a covering. The excoriation in streaks, the unguinal excoriation, is a sign of a pruritic state of the skin, and may lead us to the diagnosis of a prurigo, a pruriginous leichen, a leichen urticatus, a scabies, or a papular ekzema; we also look for the marks of the nails in lepra; while the small black scabs of prurigo and leichen urticatus covering the summit of abraded papulæ are a pathognomonic character.

In the abrasions formed upon the summits of the papulæ of ekzema there occurs an oozing of a transparent colourless fluid; not unfrequently these circular abrasions have the appearance of holes in the skin, through which a watery secretion exudes; and, where a portion of cuticle of greater extent is removed from an ekzematous skin, the denuded surface is found to be coated over by a transparent, jelly-like blastema, the material of reproduction of a new epidermis or of a muco-purulent secretion. When dressings dry upon an ekzematous patch, their removal is very frequently accompanied with the production of these circular abrasions, and if the cuticle be already loosened, by excoriations of greater extent and irregular figure; and from both kinds of excoriation, blood is poured out, or the viscous and transparent exudation already spoken of takes place. As, in excoriation, there is no important lesion of the derma, and frequently none whatever, this form of injury heals up and disappears without leaving behind it a trace of its previous existence.

INDURATION of the skin, with or without thickening, and with or without implication of the subcutaneous tissues, is sometimes present on the surface of the body to a greater or less extent, and to a more or less limited degree. The pathological

change in the dermal tissues is infiltration and condensation; and its active cause is defective nutrition. This kind of induration is very characteristically seen in xeroderma, in which the skin of the hands and feet, and sometimes other parts, resembles leather or parchment rather than skin. It is met with also in morphœa alba lardacea, wherein the infiltrated matter would seem to be a solid white substance rather than a fluid, but comes before us most commonly in chronic ekzema. To such a form of ekzema we have given the names sklerosum and verrucosum; and we have seen it most frequently on the back of the hands, on the shin, and on the forearm just below the elbow.

To a more inveterate form of induration of the skin the term skleriasis or dermato-sklerosis has been applied; and another form of induration associated with infiltration is met with in spargosis, and especially in bouknemia.

INCRUSTATION is a consequence of the formation of secretions on or in the skin, and the desiccation of those secretions, so as to create a temporary covering; and the crusts present a certain variety in accordance with their deep or superficial origin, the nature of the secretion of which they are composed, and the rapidity of production of the secretion. Thus, they may be as *thin* as scales of epidermis, when they result from the desiccation of the transparent blastema which is the first effort of restoration of an abrasion; or they will present considerable *thickness* when their formation is protected by treatment or situation; when, for example, the secreting surface is left undisturbed; when the secretion dries upon the exterior and so favours an accumulation beneath the desiccated film; when the effused fluid is covered by the epidermis, or when it is retained *in situ* by the hair. We may remind you of the thin and almost transparent crusts which are produced on the excoriated surface of a ruptured

bullæ or phlyktis, and compare with this the thick mask of ekzema larvale or crusta lactea, the rugged crust of impetigo scabida, or the conical or oyster-shell crusts of rhyphia or rupia.

Crusts will be thinner or thicker, according to the degree of fluidity or inspissation of the fluids of which they are composed, and in some measure in proportion to their rapidity of production. Limpid fluids, besides containing less solid matter capable of concretion, will evaporate or dribble away from the exuding surface; denser and more viscous fluids will remain, will leave behind more solid matter when evaporation has taken place; and, having a longer time to desiccate, will fashion themselves into a protecting crust. Moreover, when the secretions are produced rapidly, they are carried away by their own impetus, whereas, when they are poured out slowly, desiccation and secretion go on simultaneously.

We have next to call to mind the material of crusts; in general it is blood, or lymph, or cyto-blastema, or pus; sometimes the secretion of the sebiparous glands and sometimes disorganized or altered tissue. Sometimes these products exist in a separate form; at other times they are commingled, and occasionally may be produced alternately. The diverse composition of the crust will naturally occasion a difference in its colour; the sanguineous crust will be black, the lymph crust will present a shade of light-brown, the blastema crust will be brownish and yellowish, the purulent crust yellow and greenish, the secretion crust grey or dusky-green, the tissue crust or scab, or eschar, amber-coloured or deep-brown, or even black, and the crust of abnormal tissue, for example, that of the phytiform tissue, greyish or yellow. You will remember the little black, speck-like crusts, surmounting the papulæ of prurigo and leichen urticatus; the thin and thick, dense and spongy lamellæ of ekzema ichorosum; the yellow crusts of ekzema pustulosum,

which suggested to the Greeks the term *melitagra*; the greenish crust of ekzema larvale or crusta lactea; the grey and rugged and often fissured crusts of impetigo scabida; the grey and greenish or brownish crusts of rupia; the grey and brown and greenish concretions of sauro-derma or sauriodes; the amber-coloured and black scabs of herpes zoster and variola; the black and enchased scabs of ekthyma and furunculus; and the greyish-white and sulphur-yellow crusts of phytosis tonsurans and phytosis favosa.

FISSION is a breach of continuity of the skin, and is a consequence of a previously existing infiltration and induration; hence, we might, if we chose to be hypercritical, treat of it as a tertiary lesion, as an accident consequent on a secondary condition. It is certainly one of the remarkable phenomena of the economy of the skin, that under the influence of hyperæmia, followed by infiltration and thickening, the skin is apt to become so brittle that it breaks or cracks, or chaps with the greatest facility—that, in fact, the motions of a joint are sufficient to produce a rent or fissure extending through the upper strata of the derma, and sometimes more deeply. The most familiar example of fission of the skin that we can bring before you, is that of the chapped hands or wrists so common in the winter season. But a similar occurrence of *chaps*, the *rhagades* of the Greeks—from *ragas*, a rent or chink, and the *rimæ* of the Latins—is met with under other circumstances, as in chapped nipples, in fissures of the nostrils, the eyelids, the ears, the mouth, and the anus. Chaps are also seen in association with the tubercles of lepra and dermato-syphilis, in chronic ekzema of the hands and feet, the so-called *ekzema fissum* or *rimosum*, psoriasis palmaris, and plantaris, and in dermato-syphilis palmaris et plantaris. In the palm of the hands and in the flexures of the fingers, the fissures are apt to assume the character

of deep gashes; we have seen them in children, extending completely around the finger as though threatening amputation of the part; while upon the tips of the fingers they assume a longitudinal direction, like rents produced by the over-distension of the tissues. In the case of the nipple, the skin is often very deeply divided, and the nipple appears to retain its attachment only through its bundle of excretory ducts.

ULCERATION is another example of a late secondary lesion; it is a loss of continuity of the skin consequent upon the removal of a portion of its tissues. It is circular or oblong in its form, with a well-defined and abrupt margin; and sinks more or less deeply into the integument. Besides the common forms of ulcer of the skin, the acute, the chronic, the irritable, and the indolent ulcer, which belong to general surgery, we find ulcers sometimes developed in ekzema in association with varicose veins; we have the ulcers of chilblains, of furunculi, of anthrax, and, in addition to these, the specific ulcerations—namely, the strumous, carcinomatous, leprous, and syphilitic ulcers. We must impress upon you the necessity of distinguishing between an excoriation, which is always superficial; a chap, which is a mere fissure of limited depth; and an ulcer, which presents an actual loss of substance, although to a variable depth, sometimes as in serpiginous dermatosyphilis, merely sweeping away the surface of the papillary layer, and at other times, as in strumous, elephantous, and carcinomatous ulceration, penetrating through the entire thickness of the integument, and reaching the subcutaneous tissues.

The features of interest in an ulcer are, its depth and extent, the condition of its edges, and the appearance of its base, with the kind of secretion which is poured out. Deep and extensive ulcers are often troublesome to heal; the edges in a healing

ulcer slope evenly down to its base ; they are neither too sharply defined, nor undermined, nor everted, nor swollen. The base of a healthy ulcer is roughened by growing buds or granulations,—in which the processes of restoration are proceeding with active energy,—rising evenly to the level of the surrounding surface, and linking, as it were, hand in hand, one border of the ulcer with the other. But the smooth, the red, the pale, the weeping, the dry, and the sloughing ulcer are all unpromising. The ulcer which creeps gradually outwards by its circumference, whether uniformly or on one side more than another, must be looked upon with suspicion, and will probably turn out to be a specific ulcer, may be strumous, or carcinomatous, or syphilitic. An ulcer which runs along rapidly by the circumference is commonly termed *serpiginous*, from *serpere*, to creep, the equivalent of the Greek *erpein*, or objectively, *herpes* ; sometimes it heals on one side as rapidly as it progresses on the other, and then we have before us a *horse-shoe* ulcer ; sometimes its rapid destruction of tissue suggests the term *esthiomenon*, an eating sore like that of *lupus exedens* or *lupus vorax* ; and sometimes the sudden disappearance of substance admits of being expressed by the word *phagedæna*, from *phagein*, to devour.

CICATRISATION is a reparative process, and results in the production of a scar or *cicatrix*, the *oulé* of the Greeks. A *cicatrix*, therefore, is not a lesion, but the sign of a pre-existing lesion, and may be the index of a foregone wound or ulceration. Looked at a little more closely we have not only the evidence of a reparative process but also of a reparative material, for the *cicatrix* is always distinguishable from the normal integument and can never attain the height of organization of the true skin ; it is white and smooth, and often uneven ; sometimes sunk below the level of the

surrounding skin, sometimes raised unequally above it; sometimes thin and partially transparent, sometimes thick and opaque; sometimes soft and flaccid, but more frequently hard and tough.

The material of composition of a cicatrix is Nature's most abundant and simplest constructive element, namely, connective tissue, and connective tissue is massed together to supply the place of the lost skin; sometimes it is spread out evenly on the denuded bed and forms an uniform layer; but sometimes the regulating power is lost, and then it is accumulated in excessive quantity and in varied shapes, sometimes in the form of a ridge, sometimes in that of a tumour-like prominence, sometimes in cord-like bands, and sometimes in that of a reticulated web. Excess of connective material constitutes hypertrophy, that is, excessive growth; or hyperplasia, that is, excessive production; and has further received the name of false cheloma, *cheloides spuria*.

The healthy formation of a cicatrix will therefore be determined in great measure by the nutritive health of the individual, and in part by the local injury sustained. Where, from the existence of ill-regulated or unbalanced trophic power, there is present in the constitution a tendency to hypertrophy or atrophy, the cicatrix will exhibit a corresponding relation. Thus in struma, which is essentially a disease of defective and ill-regulated, and consequently, perverted nutritive power, the false cheloma is a common occurrence; and another phenomenon connected with the same diathesis is the tendency to the breaking down and dissolution of the cicatrix after it has been completely produced.

If now, we look into the anatomy of a cicatrix we shall find it to be a layer of connective tissue, sparingly supplied with blood-vessels and nerves, and coated over with an epithelial layer correspond-

ing with the corneous stratum of the epidermis. There is no proper corium with its *pars reticularis* and *pars papillaris*; there are no sudoriparous and sebiparous glands; no hair follicles; and there is no rete mucosum. While the process of connective-tissue formation is active, the cicatrix is more or less reddened in colour from the presence of an abundant capillary rete, but when the formative process is completed, the capillaries are reduced in number, and the cicatrix is remarkable for its dull-whiteness, and at a still later period for a bluish tint. On close inspection, a few red streaks, representing small venules, and sometimes minute arteries, may be found scattered from point to point, the venules taking their origin in a coarse network, and sinking here and there through the bands of connective substance into the subcutaneous tissue. This coarse vascular supply very probably represents the track of the few nervous filaments distributed to the structure, for of the presence of nerves we have frequent evidence in the sensibility of a cicatrix; generally it possesses but little feeling, but sometimes it is exquisitely sensitive.

One of the most remarkable of the properties of a cicatrix is its quality of contraction. Attached all around and continuous at its borders with the sound skin, and at the same time adherent by the rest of its extent to the surface on which it is formed, its contractile action draws from the circumference towards the centre, and the tendency of this contraction is to produce a puckering of the surrounding integument; and where the contraction is resisted, to draw the unresisting towards the fixed point. In extensive burns and scalds this property of the cicatrix sometimes gives rise to great inconvenience, and produces a contraction of flexible parts and of joints that ends in serious deformity; while, on the other hand, in surgery, we make use of this known property of the cicatrix

whenever we wish to tighten and contract the skin of a part—as, for example, in that form of dermatolysis of the upper eyelids which is commonly denominated ptosis.

The absence of rete mucosum is the cause of the want of pigment of the cicatrix; and a certain imperfection of formation of the epidermis, together with the absence of the papillary layer of the derma, is the occasion of its abnormal smoothness and of the tendency to laminated exfoliation and desquamation, which always exists on the surface of any cicatrix of considerable extent. And to the latter cause is likewise to be ascribed the yellowish and horny tint which the cuticle is apt to assume.

And, now, gentlemen, we have to call your attention to a form of cicatrix, in which there has been no open sore, no ulcer, and no lesion of continuity, and yet the cicatrix is as complete as that which is dependent on those conditions. We believe that we were the first to describe this form of internal cicatrix, and we propose to distinguish it from the common external cicatrix by the Greek term, *ouloides*, signifying cicatrix-like. The *ouloid cicatrix* is met with in lupus, in syphilis, and in elephantiasis, and is the consequence of a disorganization and destruction of the skin, effected beneath the epidermis, and without interference with the epidermal membrane.

The pathological process in operation in the destruction of tissue now referred to must be termed degeneration; the tissues in consequence of defective nutrition, recede from their complete and perfect standard, and decline through the stages of a retrograde metamorphosis which reduces them to the condition of a gelatinous substance, a substance similar to that of the cellular tissue of the embryo. All the tissues participate in this retrograde metamorphosis, the vascular tissue, the nerve tissue, the

muscular tissue, the gland tissue, and the various forms of fibrous tissue; and all are reduced to one common gelatiniform substance. But the gelatiniform tissue is a substance of low vitality, endowed with incomplete life, and possessing an imperfect form: hence it becomes subject to those laws which direct the removal of useless and intrusive material; and, incapable of resistance, it is gradually absorbed and removed, leaving behind it the traces of destroyed substance which are met with in a common cicatrix.

The first time a case of lupus non exedens presents itself before you, examine with care those tubercles that seem to be composed of a drop of yellowish or salmon-coloured jelly effused beneath the epidermis, that tempt you to puncture them, but being punctured yield no fluid matter; that are not unorganized, for one or two minute blood-vessels may be seen straggling through their mass. But look around them, or rather behind them, and observe the devastation which they, or rather a similar manifestation, have committed: the papillary layer of the derma gone, the reticular structure of the corium brought into view, the reticular spaces filled with the same gelatinous substance, the glands and follicles destroyed, the rete-mucosum lost, and only a thin and smooth, desquamating, unhealthy-looking, and horny epidermis left to cover the scene of destruction. The pathological process is somewhat similar to that of the operation of potassa fusa on the skin; the surface is gelatinized, then removed by absorption; we look, and behold the papillary layer of the derma is gone, and the upper stratum of the reticular layer is brought fully into view as though by a process of dissection; or, may be, the dissolving action has sunk deeper, and a coarse reticular network exhibits the deeper portion of the corium.

Take another example of the ouloid cicatrix as it

affects the nose in lupus erythematosus, or the scalp in the same disease. On the nose, when the absorption has been superficial, every sebiparous gland surrounding the hair-follicle like a chaplet, is brought into view as clearly as if the surrounding tissue had been dissolved away and rendered transparent by a chemical process; while on the scalp the disorganization has sunk to the fundus of the follicles, and they, together with the hair-bulbs, are wholly destroyed. A similar pathological change is seen in one of the varieties of sykosis.

The pathological identity of lupus non exedens and lupus erythematosus is proved by this similarity of organic change, and a pathological relationship is, by the same observation, set up between lupus and syphilis, and both these diseases with elephantiasis Græcorum. In tertiary dermato-syphilis it is no uncommon thing to find transparent-looking tubercles which disappear under the influence of treatment, and never having broken or ulcerated, leave behind them deep pits of the ouloid cicatrix. The material composition of dermato-syphilis gummata or syphiloma is similar to these, and so also are the semi-transparent, œdematous-looking tubercles and blotches of elephantiasis.

We must also direct your attention to those remarkable ouloid markings of the skin which have received the name of lineæ and maculæ atrophicæ, or false cicatrices. In these the appearance and structure of the cicatrix are identical with common traumatic cicatrix, but there has been no external solution of continuity. Some, as the lineæ atrophicæ matrum et hydropicorum, are referrible to distension without corresponding growth, but others are met with in which this explanation is untenable. You will find some interesting cases of this affection narrated in the *Journal of Cutaneous Medicine*, vol. i., pages 140, 209; and we may add to those cases the remark, that the best example of maculæ atrophicæ

that has come before us occurred in a man suffering under elephantiasis Græcorum.

DISCOLORATION, or abnormal pigmentation of the skin, follows as a sequela several forms of hyperæmia, and consequently possesses the characters which properly belong to a secondary lesion. We may instance the black stain or melasma which is apt to succeed to a scorch, whether produced by the action of the sun or by fire; the melasma left upon the skin by a blister; by the irritant action of an eruption of lepra; or by the similar action of dermatosyphilis. When these discolorations are greenish in hue they become entitled to the term chloasma; and when their tint is yellow they constitute phakia or lentigines, or xanthochroia. In the series of secondary lesions, however, we must confine ourselves to the consideration of discolorations, that is, abnormal pigmentation, produced directly by hyperæmia, whether such hyperæmia result from an external or an internal cause. In some few instances, as in ephelis, the excessive pigmentation follows the exciting cause so directly that we cannot doubt the relation of the discoloration to the hyperæmia: this is the case in the instance of true sun-burn, the ephelis solaris; in the fire-burn, ephelis ignealis, that we meet with so commonly in France, on the thighs of women, from the use of the brazier; and in those curious examples of xanthochroia which are sometimes seen on the legs, just above the ankle, from a hyperæmia due to varicose veins. In other cases, for example in ephelis gravidarum and dysmenorrhœalis, the hyperæmia is so little defined or so transient that we are induced to refer the abnormal pigmentation to the group of primary lesions. In melasma arsenicale we perceive few signs of hyperæmia, but nevertheless we have good analogical grounds for the belief that the morbid pigmentation is preceded by capillary congestion; and in this respect melasma

arsenicale differs from melasma argenteum or argyria, in which the morbid coloration is due to an attempted elimination of the remedy and the oxidation of the metal in the tissues of the skin.

HAVING determined *anatomically* the structure of the skin; *physiologically* its properties in health; and *pathologically* the appearances which indicate its morbid conditions, its *lesions* or signs of disease, we will take a step further, and analyze any peculiarities of manifestation or local phenomena which the diseases of the skin may have to offer, whether in distribution, in figure, or in manner of development and growth.

And first, as to *distribution*. The lesions constituting an eruption may be general, or they may be partial. A *general* eruption is indicative of a general disturbance of the system, such as is met with in the exanthematic fevers and blood diseases; *e. g.*, rubeola, scarlatina, variola, varicella, roseola, dermatosyphilis, and elephantiasis Græcorum. The *causa morbi* is present in the blood, and the eruption consequently may be encountered wherever the blood can reach—wherever capillary vessels are to be found. The existence, therefore of an eruption distributed over the entire surface of the integument awakens our attention to the possibility of the disease being one of those just enumerated; and prepares us for the necessity of a general or constitutional method of treatment. There are a few other diseases that are in their nature general—not blood diseases, such as one is the disease xeroderma, a disease of development and growth, and in an advanced form termed ichthyodes.

A *partial* eruption is naturally subject to great variation in point of extent; it may be simply regional, or it may occupy the greater part of the surface of the body, and in rare instances the whole

of the integument. You may possibly suggest that if an eruption cover the whole surface of the skin it must necessarily be general; to which we must reply, that its universal distribution is merely an occasional occurrence—an exception, in fact, to the general rule. Thus ekzema may be limited to a spot of very small size; it may occupy a region; or it may pervade nearly the whole of the cutaneous surface: a perfectly general ekzema is very rarely seen, and when an approach to such a state occurs the eruption is not uniform in development on every part, as it is in the examples of general eruption already mentioned. The most completely general of the partial eruptions that has fallen under our notice was an instance of a form of ekzema first described by Devergie under the name of pityriasis rubra. A report of this case you will find in the sixth edition of our work "On Diseases of the Skin," page 177. There, indeed, the hyperæmia of the skin was more universal even than occurs in many of the general eruptions. We may make another distinction between *general* and *partial* that will serve as a further illustration of the differences of nature implied by the terms. A general eruption makes its attack at once, and has the effect of a single morbid impulse; but the partial eruption is the manifestation of repeated impulses, and is essentially successive. It begins in one or more spots, as an accidental phenomenon, then it may appear in a similar manner on other spots, and thus by degrees spread over the entire surface, and prove to our observation that a partial eruption may also be universal.

A modification of the partial form of eruption is met with in the presence or absence of a tendency to *symmetry*. A general eruption is necessarily symmetrical, because no part of the surface escapes; symmetry is also seen, but in an uncertain degree, in the ekzematous eruptions, comprising ekzema,

leichen and impetigo, but is more decidedly marked in lepra. This character of symmetry, therefore, is one of some interest, and must be discussed hereafter. At present it is sufficient to say that if you find ekzema on one hand you will generally find it on the other; if on one ear it will be likewise found on the other; if in one axilla or groin, it pretty certainly exists in the other; if on one side of the body, whether limb or trunk, it is equally present on the similar part of the opposite side. But there the correspondence ceases; there is no uniformity of extent of the eruption; there may be much on one side and little on the other side. It is evident that the symmetry obeys an accidental law—a law independent of the *causa morbi*; in other words, there are two laws in operation—a law of the system which originates the disease, and a law of the part which determines its local distribution and its extent; and these two laws operate with a certain degree of independence.

But in the instance of lepra the two laws are more or less intimately united into one, and they operate together. When the tendency to the disease or the diathesis exists, the disease will manifest itself not only with exact symmetry but also on certain special parts of the body, and independently of local phenomena of any kind. A similar double law would seem to govern another symmetrical affection, namely, phytosis versicolor. Thus, if we take a case of ekzema, we find the eruption selecting a seat, but without much preference; it may be the flexures of joints and the hollows of folds, or it may be the internodial portion of limbs; sometimes it is the sensitive skin of the pudendum, the groins, or the axillæ, and sometimes the less sensitive scalp or the atmosphere-hardened hands or fingers. All certainty is set at defiance by ekzema; and this, in fact, constitutes one of its most distinguishing characters. How different is lepra! symmetrical not

only in situation but also in figure and in size, and governed by a law which is at the same time a *causa morbi* and an *ordo figuræ et loci*, there is a constitutional and a local impetus both synchronous. If there be spots on the limbs they will usually be found symmetrical, and at the same time we discover the disease on both elbows and on both knees. The same may be said of phytosis versicolor, always occupying the chest, the groins, the back, and the joints, and always with the most exact symmetry. If we are shown a spot of lepra we can predicate with certainty that it will exist at the same time on the convexities of the elbows and knees. If it be a spot of phytosis versicolor we should, after looking at the upper and lower part of the trunk, and the joinings of the trunk with the limbs, just cast a glance of recognition, not at the convexities of the joints, as in lepra, but into the flexures of the elbows. You see, gentlemen, you have now before you three common diseases of the skin well characterized, easily distinguishable, utterly incongruous as compared with one another. Let us instance their presence on the integument of the elbow-joint, and let us see how we should deal with them. It is the convexity of the elbow; then the disease must be lepra. We look; we find a dry, thick patch of white desquamating epidermis; no other disease presents similar characteristics; our diagnosis is confirmed. But the situation, instead of being the convexity is the concavity of the joint; the lesion is a yellow-brown stain, without hyperæmia, or rather an assemblage of small islet-like patches more or less scattered; the case is inevitably a phytosis versicolor. Or, still the concavity of the joint, the surface is red and itchy; we need go no further, the case is one of ekzema. But for your sake we will make one observation more: the skin is thickened in consequence of infiltration; there are cracks in the lines of motion, and there is a moist exudation; no

further inquiry is necessary ; it can be none other than an ekzema.

Gentlemen, we want you to distinguish between that which is general, because it proceeds from a general cause ; and that which is partial, because it depends upon some special although perhaps unknown condition of the part. To go back to a previous illustration, we may regard a state of contamination of the entire mass of the blood as the cause of the general affection, and if we remain content with that explanation, there our inquiry may end. But then the question arises—is the general affection, elimination of the poison ; or is it simply a state of morbid innervation of the skin induced by the presence of a poison in the blood ? If the latter supposition be admitted, the cause of the partial manifestation of eruption may only differ from the general cause in the nature and quantity of the poison, whatever that may be. For although we may say that the partial distribution of an eruption implies the presence of a local cause as well as a general cause, the same may also be said of a general eruption, say of measles, wherein, besides the general cause, we have undoubtedly a certain condition of the skin, which favours the development of the exanthem in the papillary layer of the derma in preference to any other part of the body.

One of the most important and at the same time a very interesting manifestation of partial distribution of the eruption is that which has reference to the selection of a region of the body, and the limitation of the disorder to a prescribed boundary ; in other words, a *regional* distribution. An early classification of affections of the skin adopted by the ancients, consisted in dividing them into diseases of the head and diseases of the rest of the skin. The old Italian dermatologist, Mercurialis, observes :—“The skin of the head, on account of the brain, which is the most humid and the greatest of the

members, is subject to certain peculiar affections. These affections are, diseases of the hair and diseases of the scalp. The diseases of the hair are:—ophiasis, defluvium, alopekia, calvitium, and canities; those of the scalp are ulcers, both discharging (manantia) and dry. The diseases of the skin of the rest of the body are divisible into three groups, namely, those of colour; those of roughness and smoothness; and those of magnitude.”

But it is with a very different object to that entertained by the ancients that we call your attention to the special manifestation of cutaneous disease on certain regions of the body, and also to the special diseases of those regions. We want simply to fix in your mind the fact that cutaneous diseases, like plants, have their regional habitations, and that the same disease on different parts of the body may be most diversely manifested. Let us select a few instances for illustration, for example: 1, the hairy parts of the head and face; 2, the non-hairy parts of the head and face; 3, the trunk of the body; 4, the pudendum and perineum; 5, the arms; 6, the legs; and 7, the hands and feet.

In the hairy parts of the head and face, the commonest eruption is, ekzema, in its three forms—ichorosum, pustulosum, and squamosum; ekzema squamosum being the porrigo of Willan, and the pityriasis capitis of ourselves. Next to ekzema, we have lepra; then phytosis tonsurans, or ringworm; kerion; and phytosis favosa, or simply, favus; encysted tumours; sykosis; erysipelas, and, lastly, loss of hair and special affections of the hair. Of this list, ekzema, lepra, encystis, and erysipelas are common to the whole body as well as to the head, but on the hairy scalp ekzema presents peculiar characters, especially its dry form, namely, pityriasis; lepra also has a special character on the scalp, namely, a diffused form; encystis is more frequent on the scalp than in any other region of the body; and erysipelas of the

scalp is remarkable for its dangerous consequences. Phytosis, kerion, favus, sykosis, and affections of the hair are special disorders of the hairy portion of the head and face, although they may occasionally be met with in other parts of the body ; one of them, namely, sykosis, being essentially a disease of the face, and in rare instances only intruding upon the region of the scalp.

The most prominent diseases of the non-hairy parts of the head, namely, the face, the ears, and the nape of the neck, are :—ekzema in all its forms, including pityriasis, impetigo, gutta rosea, akne, sebaceous miliary tubercles, herpes, melasma, xanthelasma, nævus araneus, lupus in its three forms, exedens, non-exedens, and erythematosus, and epithelioma. Already, you will perceive, a regional difference manifesting itself in the absence on the face of lepra, and in the presence of akne, gutta rosea, lupus, and epithelioma. Akne and gutta rosea are never met with on the scalp ; lupus exedens is almost exclusively limited to the nose ; lupus non-exedens encroaches on the scalp very rarely ; lupus erythematosus is not unfrequently present at the same time on the face and on the head, giving rise to a form of incurable alopekia areata ; and epithelioma is also an unusual affection of the scalp. If we return to the diseases before us, we shall further discover that each has its own special tests of manifestation ; ekzema even, which occasionally occupies the whole face, most commonly prefers to confine itself to a part, for example, to the ears ; sometimes the entire pinna, sometimes its creases of junction with the head ; to the forehead ; to the grooves at the base of the nose ; to the lips, or to one or other cheek ; impetigo, an affection of children, cropping up around the nose, the mouth, and the chin ; gutta rosea, a disorder of adults, showing itself on the nose, the adjoining part of the cheeks, in the hollow between the lower

lip and the chin, and in the centre of the forehead at the root of the nose; akne, an eruption of adolescence and approaching manhood, scattering its conical pimples over the forehead, the cheeks, and the sub-maxillary, sub-auricular, and sub-occipital regions of the neck; herpes occurring on the forehead or temple of one side only, or at the apertures of the nose and mouth; melasma, a disorder of females, fixing upon the forehead; xanthelasma, an affection of the eyelids; sebaceous miliary tubercles dispersed around the eyelids and along the temples; lupus exedens attacking the nose; lupus non exedens the cheek, and thence spreading to the nose; and lupus erythematosus, the nose and cheeks, in scattered spots of small extent; and, lastly, epithelioma, making its appearance as a small transparent tubercle, slowly ulcerating, on the nose or on the cheek; possibly in the near vicinity of the lower eyelid.

The more common eruptions of the *trunk of the body* are, in addition to ekzema, lepra, phytosis versicolor, herpes zoster, prurigo, leichen planus, and molluscum areolo-fibrosum. Ekzema on the general surface of the body commonly appears in its papular form, while in the hollow of folds, as of the axillæ, the groins, the mammæ, and around the mamillæ, it is ichorous, mucous, and encrusted. Lepra is most abundantly accumulated around the waist in women and about the lower half of the trunk in both women and men. Phytosis versicolor, which is almost special to the trunk, is found on the sides of the chest converging to the middle line, and on the flanks, the groins, and upper part of the thighs, in front; and in the vertebral groove, and thence spreading outwards on the ribs and upon the flanks behind. Herpes zoster, an unilateral eruption, may occupy the lower border of the pectoralis major and scapula; the loin, the flank, and the inguinal region; or the lower ribs; but is most

commonly met with in the latter situation ; in both the former it is apt to spread to the adjoining limb, to the shoulder and arm above, and to the thigh below, always following the course and ramifications of one or two neighbouring nerves. The papulæ of prurigo with their black encrusted heads are scattered more or less sparingly over the entire surface, and are intermingled with scratches inflicted by the nails for the relief of the pruritus. Leichen planus may be found on any part of the trunk, but is most abundant around the waist, upon the loins, and upon the hips. And molluscum areolo-fibrosum, a disorder of elderly persons or of a neglected skin, is more frequent on the coarse integument of the back, and upon the sides of the trunk than elsewhere. The regional distribution of eruptions on the trunk is influenced by a variety of conditions, to which we may now briefly advert, as being more easily studied on a large scale on the body than on the limbs. One condition relates to ventilation ; the well-ventilated parts are less susceptible of disorder than those which are ill ventilated, such as the hollows of the axillæ, the groins, and the folds of flexion generally. In the latter category must be placed the waist in women, which is unnaturally heated and unduly pressed by the bands and ligatures of their clothing. Another condition is the presence or absence of a wholesome friction and ablution ; on the back of the trunk, which is beyond the reach of the hand, diseases of abnormal growth are apt to make their appearance which are not so commonly seen elsewhere, and especially in elderly people. While a third condition, has reference to the distribution of the cutaneous nerves as we see exemplified in phytosis versicolor, and particularly in herpes zoster.

The chief diseases of the region of the pudendum and perineum are—ekzema, pruritus, herpes, and

thymic warts. The ekzema appears in its ichorous and squamous forms; and, occasionally, in one which is peculiar to the region, namely, ekzema marginatum or leichen marginatus. Pruritus is another annoying affection which attains the highest point of aggravation in this region, whether as pruritus scroti, perinei, pudendi, or ani; sometimes existing alone, but more frequently in association with or on the skirts of ekzema. Herpes præputialis, or more correctly progenitalis, because it is by no means limited to the prepuce and may occur in the female as well as in the male, is another troublesome affection; and not less so are the tegumentary growths and vegetations comprehended under the name of thymic warts, mollusca and condylomata.

On the *arms* we have to consider the joints and the internodal portions; on every part ekzema may make its inroads, for ekzema is cosmopolitan, or rather cosmodermatical, and to it no modification of the cutaneous tissue comes amiss; sometimes we find it on the thicker integument of the outside of the limb; sometimes on the thinner skin of the inside; and anon, in a favourite haunt, the flexure of the elbow. There, also, in the bend of the elbow, if it exist at the same time on the trunk of the body, we may find phytosis versicolor; while the convexity of the elbow belongs especially to lepra. So with regard to leichen planus; in its discrete form it is pretty sure to be found on the front of the forearm just above the wrist; and if it be coherent, it may occupy the inner side of the forearm as high as the elbow.

The peculiarities of the region of the *lower limb* are principally due to the dynamical impediments of the circulation; ekzema and lepra are distributed as on the arms; being pretty certainly present on the concavity and convexity of the knee respectively, when absent or only scantily developed elsewhere.

Ekzema is more frequently dispersed in nummular and circumscribed blotches on the lower limbs than in other situations; and is apt, from the existence of hyperæmic congestion, due to the torpid circulation through varicose venous channels, to spread, often from a small spot, over the whole leg from the ankle to the knee.

The nervous relations of pruritus are manifested on the lower extremities by regional itching; such as in the course of the internal cutaneous nerves of the thigh; the cutaneous branches of the great saphenous nerve below the knee; and the cutaneous nerves of the ankle. Another consequence of the paresis of circulation in the lower limbs and the consequent hyperæmia, is the occurrence of a change in the blood that results in pigmentation. A mottled pigmentation, sometimes black, sometimes brown, but more frequently yellow, a xanthochroia or chloasma, is a common phenomenon on the shin and on the small part of the leg just above the ankle.

The *hands* and the *feet* are common seats of ekzema, but the protective influence of clothing is strikingly manifested in the less frequent affection of the latter than of the former. On the hands, ekzema is chiefly met with on the fingers and on the dorsum. Lepra, in inveterate cases, is apt to encroach on the dorsum manûs, but mostly attacks the nails. Other affections of the hands are, impetigo, scabies, syphilis, lupus erythematosus, perionies or chilblains, and disorders of the nails, including whitlow. That disorder of the back of the wrists that is almost peculiar to the region, namely chaps, the effect of cold weather, is an ekzema. A chronic inflammation with exfoliation taking place on the palm of the hands, is termed psoriasis palmaris, but psoriasis palmaris may be the representative of four different diseases. It may be ekzematous, or syphilitic, or lepra, or a

leichen planus; for all these affections manifest their existence by attacking the palm of the hand, and present appearances not very dissimilar. Impetigo phlyktanodes, a pustulo-vesicular eruption of children is met with on the front of the wrists and the back of the hands. Scabies bears upon the hands, the acari, and the consequences of their irritation; the animalcules are met with in tortuous burrows on the sides of the fingers, the ulnar side of the hand, in the grooves of the wrist, and in infants in the grooves of the palm; the eruption is found on the thinner integument between the fingers, on the dorsum of the hands, and on the wrists. Chilblains and chilblain-like congestions are met with on the fingers of children and young persons; and on the toes and heels of the feet and on the borders of the feet. While whitlow is found on the ends of the fingers and near the margins of the nails.

Regional distribution is also influenced sometimes by the age of the patient: an eruption, such as molluscum adenosum seu sebaceum, appearing in a child, will show itself chiefly on the face; in an adult it must be looked for on the front of the trunk of the body or on the neck; and some affections are especially diseases of a certain age. Ekzema may be developed within a month after birth in the form of ekzema infantile; while three or four years, and generally later, is the age at which lepra is first manifested. The age of evolution of akne is puberty; while that of the appearance of gutta rosea is thirty or forty.

Next to distribution, the *figure* of eruptions of the skin claims our attention: an eruption may be *diffused*, that is, it may be spread out more or less extensively; or it may be less extensive and *circumscribed*, that is, limited by a well-marked boundary. Thus you may find an erythema or an ekzema, which shall be *diffusum*; and another, which is distinctly

circumscriptum. Then an eruption may be *circinatus*, that is, circular; or *annulatus*, shaped like a ring; or *marginatus*, distinguished by a prominent margin; or *gyratus*, an irregular and confused assemblage of interrupted or broken rings.

Or, the elements of an eruption may be scattered separately over the surface, that is, *disseminated*; or they may be accumulated in a mass, *aggregated*. When they are perfectly separate and distinct, we distinguish them by the term *discrete*; when they are assembled in small separate clusters like a bunch of currants or grapes, we style them *corymbous*; then they may be aggregated so closely as to touch each other by their base, when they would be termed *coherent*; and lastly, they might become fused or blended in one continuous mass, or *confluent*. It must not, however, be supposed that these figures and shapes are simply accidental; they all obey a physiological, or rather a biological law, and it would not be difficult, were it not for the amount of detail required, to give a very satisfactory explanation of them all.

So, in the instance of *development* and growth of eruptions, there is no accident; there is an ever-present biological law, which, by mere perversion, lays the foundation of a pathological state. In its development, an eruption may attack the most superficial part of the skin, or it may affect its tissues more deeply; it may give rise to an uniform hyperæmia, or it may influence chiefly the follicular element of the derma, and give origin to a punctated rash; it may be stationary, or it may have a tendency to spread; and it may spread with rapidity or very slowly; and again, the spreading may be a mere expansion of a *causa morbi*, or it may be a symptom of exhaustion of the disease. Our fathers have left us a poetical illustration of the outburst of an eruption, as also of its expansive evolution, in the term *exanthema*, a blossoming forth. This term was

common among them as the expression of the erythema and the knidosis or urticaria of the present day, and before the so-called exanthematic fevers, rubeola, scarlatina, and variola, had made their appearance in Europe.

In point of *growth*, cutaneous eruptions have a centrifugal activity, spreading from a centre, or from the border of a matured patch, into the neighbouring tissue, by a law of contiguity. Sometimes the centrifugal growth only tends to increase the size of the patch or the dimensions of the eruption; at other times, the centre of the patch recovers its healthy condition, and the eruption is converted into a ring, of which the growing belt possesses a greater or lesser degree of breadth. In the annular forms of erythema this character is very conspicuous; as also in erythema or herpes iris; in herpes circinatus; in phytosis annulata; in lepra; in ekzema marginatum or leichen marginatus; in leichen planus; and in some forms of ulcerative disease, such as lupus, cancer, and dermatosyphilis. Ordinarily the ring is single, at other times, as in erythema or herpes iris, and sometimes in ekzema marginatum or leichen marginatus and phytosis annulata it is successive. In the more superficial affections, the energy of growth is uniform throughout the whole extent of the circle; but occasionally, and pretty constantly in the ulcerative diseases, it is more active at one part of the ring than elsewhere. This method of growth is suggestive of various terms, for example, *ερπης* from *ερπειν* to creep, among the Greeks; *serpigo* and *serpiginous* among the Romans; and spreading or creeping amongst ourselves: added to which, where ulceration is concerned, we have *εσθιομενον* among the Greeks, and *rodens* and *exedens* derived from the Romans.

DIAGNOSIS.—And now, gentlemen, you will be anxious to put in practice the knowledge which you have attained; you will be desirous of applying your

observations to the purpose for which it was intended,—namely, the *diagnosis* of disease. We have said enough to prove to you the importance, nay, the necessity of careful observation; you have to determine the differences between health and disease, and therefore you must be acquainted with the appearance and qualities of the skin in both those states. The aberration from the standard of health is one in which, perchance, the epidermis may be principally concerned; it may be too dry or too moist; too rough or too smooth; too thick or too thin; or it may be in a state of exfoliation or desquamation. Or it may be that the rete-mucosum is chiefly in fault, as indicated by variation of complexion or colour. Or, the follicles and glands of the skin are the seat of disorder, the sweat glands, the sebaceous glands, or the hairs.

In the next place, you may discover those signs that prove the affection to be not simply epidermic, but also sub-epidermic; there may be swelling denoting infiltration of tissue, and with infiltration you may find vascular congestion, prominence of follicles constituting papulæ, effusion of serum in the form of vesicles and bullæ, or of purulent fluid producing pustules, excoriation of the cuticle, and crusts resulting from the desiccation of morbid discharges.

Then there may be symptoms of nervous irritation in the occurrence of abnormal sensations of various kinds, and especially of itching. There is the tickling itch of lepra and scabies, the tingling of urticaria, accompanied with spasm of the skin producing wheals; there is the burning and piercing itch of herpes; the creeping and prickling itch of ekzema; and the fierce and lancinating itch of prurigo. And in addition to these symptoms there are the traces of scratching upon the skin, in various degrees of freshness, and the pigmentary marks which continued scratching is certain to leave in its train.

Besides all this, the material of diagnosis, we have to take into consideration the locality of the eruption, the age, the sex, the rank, the occupation, the habits of the patient, and every circumstance in his surroundings which may bear upon his health. All these appearances and circumstances taken together constitute the physiognomy of the disease; and the physiognomy, in its totality, leads us to the correct discrimination of the nature and of the name of the disease.

ETIOLOGY.—The *cause* of disease of the skin either originates from within, or proceeds from the exterior of the organism, in the former instance constituting an *internal*, and in the latter an *external* cause. The internal cause operates through the agency of other portions of the economy, such as the nerves and the blood, and is therefore *indirect*, while the external cause is without intervening agency, and consequently *direct*. Moreover, the affection of the skin in the instance of the internal cause is an indication or symptom of an internal state, and is therefore said to be *symptomatic*; while the disease, originating in direct agency, belongs essentially to the part, and is therefore, *idiopathic*, or simply *local*. An internal cause is, consequently, symptomatic of some disorder of the economy, while the external cause is local and idiopathic.

The agents of the internal cause are, the blood, the nerves, and the internal system of organs, such as the digestive, the assimilative, the emunctory, and the reproductive; and the disease of the skin may be said to be symptomatic of a condition of the blood, of the nerves, or of the different organs. We sometimes make use of the term sympathetic, and speak of an eruption as sympathetic of or in sympathy with a morbid state of the stomach or digestion; or of the reproductive system or its functions.

We find illustrations of the morbid influence of

the blood, in the so-called blood-diseases; the exanthematic and continued fevers, in secondary syphilis and elephantiasis, and also in the altered constitution of the blood which we term dyskrasia. The operation of the nerves is shown in some forms of erythema, in prurigo, and herpes; while morbid sympathies with the various organic systems of the body are evinced in knidosis or urticaria, in ekzema, and in chloasma and melasmata.

Local cause will comprehend all those conditions, either existing in the tissues of the part, or operating from the exterior, which are capable of setting up a morbid action in the skin. Akne, cheloma, and ichthyodes we must regard as an aberration of function of the part. While the external agencies capable of influencing the skin injuriously are very numerous; for example, extremes of cold and heat, of dryness and moisture, friction, contusion, and mechanical and chemical irritants of every kind. Among mechanical irritants are comprised the epizoa, namely, the *acarus scabiei*, the *pediculus*, the *pulex*, the *cimex*, and other insects which attack the skin. Some dermatologists comprehend in this series the epiphyta, as well as the epizoa; but, we believe, without sufficient proof; the phytiform degeneration of the cells of the rete-mucosum has been regarded as a parasitic plant; and the number of these supposed plants is very considerable. At one time there was a striving of the microscopists for the appropriation of a parasitic plant, each to himself; at present the effort is to show that the diversity in the supposed plants has reference to a difference of locality of the skin. Soon, we doubt not, it will be admitted by all, that the plant-like structure in question is a degeneration of an animal tissue to a lower form. In the mean time the doctrine that you will hear from our lips—a doctrine to which we have held unshaken for nearly twenty years, and seen no reason to alter—is, that the so-

called dermatophyta are an effect, and by no means a cause of disease.

But while, gentlemen, we are discussing internal and external causes, we must not fail to bear in mind the phenomena of causes in general. A lesion represents a cause in action, and is therefore denominated a *proximate* cause; now the lesion has been excited by another kind of cause, and that we distinguish as an *exciting* cause; but the excitement in a multitude of instances would fail, unless there were a disposition or predisposition to be so excited; this, therefore, is a *predisposing* cause; and, very commonly, there exists a still more distant cause, which we term a *remote* predisposing cause. Let us take an example: bad and improper food occasion mal-assimilation; mal-assimilation induces a dyskrasis of the blood; and, as a consequence, a debility of the skin; cold or heat or friction, insufficient to irritate a healthy skin, operates as an exciting cause on a skin weakened by nutritive debility, and an ekzema results. In this case, we should regard the improper food, the error of diet, as a remote predisposing cause; the resulting general and cutaneous debility, as a predisposing cause; a trivial accidental stimulus becomes the exciting cause, and so the ekzema is the consequence; or, if you please, we will take an illustration that you will meet with over and over again in practice: a child is attacked with ekzema infantile; the cause of the lesion is a weak cutaneous tissue; the cause of the weak cutaneous tissue is mal-assimilation. What, in this case, would we ask, is the cause of the ekzema? We should not hesitate to answer,—the error of diet; because, without the error of diet acting as a remote predisposing cause, the other links in the chain would never have occurred.

There is another reason why the error of diet should be recognized as a *causa causarum*. Your business is to cure the ekzema; for this reason you

must find the cause, for without a knowledge of the cause of a disease, you have nothing whereon to found your therapeutical treatment; you may treat the stomach in vain unless you recognize the fault in diet as the ruling cause; and then, a more wholesome diet, perhaps a wet nurse, is your means of cure.

Knidos or urticaria offers us a variety of examples in which an error of diet, a peccant matter introduced into the stomach as food, is the cause of the peculiar irritation of the skin; we may instance shell-fish; although, as you are well aware, a variety of harmless edible substances may be equally hurtful. Other causes of affections of the skin, sometimes exciting and sometimes predisposing, are chills, mental emotion, nervous irritation, and also epidemic and endemic conditions. We are not now using language to which you are unaccustomed and for which you are unprepared, and we could adduce a multitude of examples if we thought it necessary, to confirm what we hold to be an obvious and indisputable truth.

IF you have followed our instructions with attention up to this point, you will be in a position to distinguish between a healthy and an unhealthy skin; and you will also be able to determine the differences of character presented by the symptoms of cutaneous disease; in other words, by the different pathological lesions. Thus you will recognize the distinctions between hyperæmiation, papulation, tuberculation, vesiculation, phlyktænation, pustulation, squamaformation, and maculation; together with desquamation, excoriation, induration, incrustation, fission, ulceration, cicatrisation, and discoloration. You will also be familiar with the phenomena of distribution, of figure, of development, and growth of those diseases; and moreover with the principles of diagnosis and of causation. And we may further point out to you, that by the method of induction

which we have heretofore followed we shall have brought you to a new and very important subject of study, namely, that of the treatment of cutaneous disease.

Before, however, we take leave of the etiology of cutaneous affections, we may glance for a moment at two causes which we have not heretofore mentioned; namely, contagion and heredity. The views of contagion propounded by Lionel Beale, and so ably advocated by Morris, namely, the transference of an atom of one individual into the blood or tissues of another, are now very generally received. The atom is the means of conveyance of the condition of one body into another body, just as a particle of yeast, of extreme minuteness, is capable of communicating zymosis or fermentation to the whole mass of fluid which receives it. The atom of matter which thus becomes the bearer of contagion is living substance, capable of germination and growth when it meets with a favouring soil: hence its name "germinal matter;" and, although of extreme minuteness as to size, has its type in the ovum of a bird or in the seed of a plant; for what more is an egg or a seed than germinal matter inclosed in a shell, and the atom which we are now considering has also its shell, produced through the desiccation of its surface by the atmosphere. The germinal atom may therefore be dry on the exterior and moist within; but what if it be dry throughout, it is only then in the condition of a seed, or of those rotifera which, although dried up to a powder, waken into life when moistened by a drop of water. The germinal atom explains all the known phenomena of contagion, which is not the case with other theories of the communication of disease from man to man.

You must remember also that there are kinds and degrees of contagion, and that when we speak of the contagion of measles, scarlatina, variola, or typhus fever, we signify a kind of contagion that is

highly active and extremely dangerous, that the population can barely escape if brought within its influence even at a distance. Then if we speak of the contagion of syphilis or elephantiasis, we perceive an evil that we may avoid, and in which there is no danger to the community except by personal contact. Next we have the contagion of ringworm, which imperils the safety of children, but is nowise comparable to that of rubeola, scarlatina, or smallpox; and then we have besides the impetigo phlyktænodes, which has received the name of "contagiosa" from Tilbury Fox; and the molluscum adenosum, which has likewise been termed "contagiosum" by observant authorities. We might carry our illustration a little further and show that heredity is itself a kind of contagion, since it was the parent that communicated to the embryo by means of germinal matter those conditions of tissue which in after-years become manifested as a lepra, an ichthyodes, or even an ekzema.

You may possibly remind us, that in this our brief sketch of contagious diseases, we have omitted to mention scabies, a disease which, with the so-called epiphyta, has very unreasonably given the odour of contagion to all cutaneous diseases. But we have made the omission on purpose, in order to impress upon you more forcibly the true nature of scabies. If a patient be brought to you covered with an eruption which has been obviously occasioned by the bites of a parasite, say of one of those domestic tyrants, the pediculus, the pulex, or the cimex, you do not treat the case as contagious, because you know the cause to be an external one, and easily removable. The effects are little more than would be occasioned by the powder of cantharides sprinkled on the skin. We must ask you to apply the same reasoning to scabies. Scabies is a simple and varied irritation without specific type, being neither vesicular, nor papular,

nor pustular, nor anything fixed and certain, although all these forms of lesion may be present, occasioned by the presence of an animalcule on the skin; an animalcule of such delicate organization that the mere vapour of sulphur is sufficient to destroy it in a few hours. We have here no question of germinal matter and germinal atoms, and therefore the disease cannot be included in the same category of diseases with those that are truly contagious.

The contagion of rubeola, scarlatina, variola, and typhus is at present believed to consist in atoms or particles of germinal matter, imbued with the principle of disease, and thrown off by the sick, to become dispersed through the atmosphere. It is also believed that by the mere act of respiration these germinal atoms are conveyed into the air-cells of the lungs; that, permeating the walls of the air-cells and of the capillaries, they reach the blood; and that there their germinal and reproductive powers are developed. If this be the fact—and we are disposed to believe it,—the same explanation should be carried through the whole series of contagious affections. Thus, in the case of a sick child introduced into association with those that are sound, the germinal atoms given off from that child, and received by respiration into the circulating fluids of the rest, would set up all the phenomena of the contagion of ringworm, of impetigo, or of molluscum, with which we are acquainted. And we think it not improbable that the phytiform matter of the epiphyta, the so-called spores, may, by way of respiration, reach the blood of many children, and pursuing its destiny, become developed in the rete-mucosum of the skin, and so establish the contagion of the phytiform diseases, and especially of ringworm.

But you will hear a different doctrine than this in the outside world. You will be told that the phytiform matter is an independent organism of vegetable nature; that it lives like a parasite on the skin;

that it produces sporules or seeds; that these seeds are conveyed from head to head by means of the atmosphere, by brushes and combs; and that, reaching the scalp, they there take root and grow. This is the explanation which we have called the "gardener theory," and which we totally disbelieve; and this theory, amongst others, presents the great drawback of limiting the view of its followers solely to the outer surface of the skin. The disease is not a disease of the system, but of the part, and only a disease of the part so far as that it is occasioned by a foreign body acting as an irritant—that, like the *acarus scabiei*, simply penetrates the epidermis, and draws upon the rete-mucosum for its nourishment. The epiphyton is regarded in fact as a vegetable acarus, or a vegetable louse; and all that is needed to cure the disease is to kill the vegetable miscreant; and the remedies which are employed for this necine purpose are termed parasitocides; and first amongst them stands the ancient "sublimate" of the popular world, the perchloride of mercury. Now if we object to the term contagion as applied to the operations of an insect on the skin, we might equally object to it when the irritation is caused by a plant; and we think ourselves warranted in protesting against the application of the same term to the transmission of the itch or the ringworm that we should to the conveyance from one person to another of rubeola, or scarlatina, or small-pox. In fact, in whatever way we may choose to regard the matter, it is clear that the term contagion is at present used very loosely, and it behoves us to draw some line of distinction between a contagion which is certain and inevitable, and another which is uncertain, or may be avoided.

There is no question which you will be asked more frequently in practical life than—*Is it contagious?* and as trustees of the public health, it is a question which you must be ready to answer. If the

case be one of rubeola, scarlatina, or variola, you can have no hesitation; the disease is not only contagious, but highly contagious. With regard to all other diseases of the skin, you must speak in the most qualified terms. It may be necessary to put the public on their guard; but it is not necessary, nor is it honest, to create unnecessary alarm. Ringworm is one of the diseases the very mention of which is sufficient to create a panic; boys are robbed of their education by the most vulgar prejudices on the score of contagion, and medical men are too prone to adopt any fashionable theory of the day rather than rely upon their own practical experience, and make there a sturdy stand. For nearly twenty years we have maintained the parasitic theory of contagion to be false; for almost as many years we have felt the difficulty of explaining the occasional transmission of ringworm from one child to another, and the more rare occurrence of the conveyance of ringworm from a child to an adult. This difficulty is now removed by Lionel Beale's discoveries in relation to germinal matter, and we are thereby enabled to comprehend how a party of children, huddled together, may reciprocate the disorders of each other, and how such disorders may even be communicated to an adult placed in similar circumstances. But, as you well know, ringworm is an affection of childhood, and adults suffer very rarely; and when they do receive the disease, it assumes a trivial and exceptional character, namely, that of tinea or phytosis annulata. Moreover, gentlemen, we call your attention to the fact that children, to engender ringworm, must be packed together too closely, to the deprivation of proper ventilation; there must be errors of diet, air, and exercise in order to bring about the state of body in which ringworm is prone to contagion. Experience has convinced us that ringworm is periodic and epidemic, and that contagion occupies a very secondary place

in the history of its phenomena. We remember being consulted, on one occasion, in the case of a little boy and girl, brother and sister, who were both attacked with ringworm in the same week, and yet there had been no communication between them for more than a year, for one was in Essex, the other in Cornwall. Mr. Hutchinson* has directed the attention of the Profession to the fact of the infrequency of ringworm amongst the very poor, in comparison with the children of boarding-schools, and of the more comfortable classes; and he sees in this circumstance an argument against the supposed influence of dirt, and in favour of the theory of the conveyance of the disease by brushes and combs. We, however, see in it only an argument in favour of fresh air, a hardy life, and a varied and not insufficient diet. However, gentlemen, these differences of opinion should have the effect, on your mind, not of creating doubt, and of weakening your trust in authority, but of inducing you to take a broad view of any obscure and difficult questions that may come before you, and of inducing you to think for yourselves.

While on this point, and in connection with the present question, we will make another observation to you which is deserving of your attention, and which, although on previous occasions often presented to our mind, has been more particularly impressed upon it by a suggestive remark from the pen of Mr. Hutchinson.† In a recent visit to the St. Louis Hospital in Paris, he saw a case of tinea or phytosis tonsurans in an adult; and he also remarks on the frequency of favus or phytosis favosa. Now, such cases as these are entirely exceptional in England, and, therefore, you must learn to be cautious in accepting the observations and experience of a foreign country as a standard for regu-

* JOURNAL OF CUTANEOUS MEDICINE, vol. i. p. 174.

† Idem, vol. ii. p. 88.

lating the practice of your own. There is, undoubtedly, a great difference in the manifestation of cutaneous diseases in different countries under different conditions of climate and diet; and there are also undoubtedly, differences of manifestation of disease amongst the different classes at home. A scabies in the out-patient room of an hospital, or at the door of a workhouse, is a different thing altogether from a scabies in the middle rank of life, and similar differences run through the whole catalogue of cutaneous diseases.*

And now a few words as to heredity. Heredity is sometimes a vice and sometimes a habit: it is a vice in the instance of struma, syphilis, elephantiasis, and lepra; it is a habit in the instance of the most universal of diseases of the skin, namely, ekzema. In the four first-named affections, the disease is a repetition of a dyskrasia or disorganization; in the last, it is a consequence of disorder of function: we call both by the name of diathesis, implying tendency; but there is the difference between the two that there is between organic and functional. We cannot suppose that the actual

* Lepra "is remarkable for its rarity among the manufacturing population; one in 41, as compared, in the better fed and better housed members of the wealthier class, with one in 16. It will be in the knowledge of our readers that we have pointed out the substitutive character of lepra in relation to tuberculosis; and the disproportion of lepra in the strumous and the non-strumous class gives an unexpected support to our opinions. In phytosis or tinea, again, we have an illustration of the more frequent occurrence of ringworm among the wealthier than among the poorer classes, that cannot be attributed to better feeding, but must be explained by reference to the harder constitution of the latter. Among the Belfast hospital patients, the proportion of ringworm cases is one in 59; whereas in the wealthier classes it is one in 40. Another curious fact is, that in the hospital cases the figures representing phytosis annulata and tonsurans are respectively 43 and 10; while, among the wealthier classes, the relation which the two forms of affection bear to each other is nearly reversed, being represented by the figures 64 and 188."—JOURNAL OF CUTANEOUS MEDICINE, vol. iii. p. 277.

poison of syphilis is conveyed from parent to offspring, but only the dyskrasia to which the poison gives rise: this is more manifest in struma or scrofula, where there is no virus, but only a dyskrasia; and the same in elephantiasis and lepra. Amongst the commoner forms of disease, the hereditivity of lepra is very remarkable, and it occurs the most frequently without any other disorder of the health. Ekzema is also very commonly hereditary, but it is so indirectly, and secondary to some general disorder of the economy, more especially of the digestive or of the nutritive system.

THERAPEUTICS.—And, now, gentlemen, we will direct your attention to the THERAPEUTICS of cutaneous disease. In these diseases there is a cutaneous lesion and very commonly a state of constitutional disorder; hence our remedies must be of two kinds, namely, external or cutaneous or local; and internal or constitutional. To classify the external or local remedies, we must divide them into alleviatives and stimulants and caustics. While the constitutional remedies are, aperients, alteratives, and tonics. Thus if we have a cutaneous disease before us, we soothe it to remove irritation; we stimulate when the indication is to restore the tone and function of the skin; and we apply our caustics if the intention be to destroy exuberant or morbid growth. Then in the case of constitutional disturbance, whether primary or secondary, we regulate the secretions, we modify nutrition, and we restore the vital power. You may interpose the remark, that the method which we are now propounding is the method in common use for the treatment of every disease of the body. Our answer is, that it is so; and that it is an error to suppose that disease of the skin has a special pathology of its own, and a special principle of treatment; the treatment of a cut finger and of an ekzema is in reality identical. You will observe that we make no mention of specifics, and

simply because there are no such things; arsenic is a neuro-tonic applicable to every disease wherein there is loss of power of the peripheral nervous plexuses and a consequent disorder of capillary circulation and of cell-nutrition. Sulphur, in its special usage, is a simple fumigatory, destructive of the life of the humble animalcule which represents the cause of scabies, but effecting no more than a variety of other substances could accomplish; for example, common olive-oil, or the seeds of the stavesacre. Tar, again, is simply a stimulant; while the perchloride of mercury is both a stimulant and a caustic. There cannot be a question that there is a manner of handling our remedies that is worth your study, and is, in fact, the matter that most demands your attention. The master is known not by the mere excellence of his tools, but by his method of using them; and this, in fact, creates the need for clinical instruction.

The theory of medicine—and the word medicine includes surgery and every ramification of the healing art, just as the word physician is the general denomination of the practitioner of the healing art, for nature knows none of the pigmy distinctions of men—the theory of medicine at the present day is, happily, a very rational one; we no longer talk of humours and humoralism, things of the imagination, mere ideas, and incapable of demonstration, but we refer disease in its aggregate to a *plus* or a *minus* of vital power; our local diseases are dependent upon diminished vitality of tissues, our general diseases upon a depreciation of the vigour of life. And bringing this method of reasoning down to the diseases which we are now investigating, it may be shown that all our processes have for their object to remove the causes of depression of vital power on the one hand, and to restore vital power upon the other. The alleviators remove irritants which by their operation upon the peripheral nervous

structures depress and exhaust, while the stimulants are direct tonics. And the same may be said of the internal remedies when judiciously employed; aperients and emunctories remove elements which by their excess weigh down the beam of life; they create a waste which instantly becomes the most active impulse of supply; in a word, they are active agents of renovation; and then, and at the proper moment, we step in with our tonics, our digestive tonics, our blood tonics, and our nerve and tissue tonics.

We say again, and we can hardly repeat the saying too frequently, that cutaneous disease is a lowered state of vitality, in fact, a debility; a debility of tissue or of the part; and a debility of the entire constitution; and that the aim of our treatment should be to restore the power of the part, and to restore the tone of the constitution. We express an apparent truth when we say, in a particular case, that the constitution is sound, although a local disease be present; but such a statement is neither philosophical nor is it rigorously true; and it is not true for this reason, that you may add increased vigour even to that which is assumed to be sound on the average; and by the addition of new vigour the local disease will disappear. Therefore, gentlemen, while you should always keep in view, as a paramount duty, the cure of a local disease, you must also endeavour, as a still higher duty, to improve the constitution. There are cases in which you can make no progress with the local disease until the constitution is improved; and we can hardly realize a case which will not get well spontaneously, if we can succeed in elevating the vital power.

The LOCAL REMEDIES applicable to cutaneous disease are: water, in a great variety of forms; alcohol, powders, soaps, glycerine, oils and fats, acids and alkalis, vesicants, caustics, cantharides, and certain vegetable and mineral substances; for example:

wheaten flour, oatmeal, starch, linseed, poppy, bitter almond, stavesacre, camphor, resin, iodine, tar, carbolic acid, lead, zinc, silver, mercury, and sulphur.

WATER, in its several states of cold, tepid, and hot, simple and medicated, possesses a variety of properties and an equally varied range of utility. As an abluent it serves to cleanse and soften the epidermis; as a lotion it cools; as a fomentation or poultice it warms; it relaxes when hot, and braces and invigorates when cold; and may be made the medium of applying medical substances to the skin to modify the tissues or facilitate their absorption by the organism, and this either to a part, or to the entire surface of the body. When used to the whole surface of the skin, it constitutes a bath, and the bath may be charged with a variety of substances, and so become a medicated bath; thus we have baths of starch, of oatmeal, of bran, of milk, of gelatine, of iodine, of mercury, of sulphur, &c. Hebra invented a permanent warm bath, in which he kept a patient, afflicted with variola, during the whole course of the disease, amounting to several weeks. One of the commonest, and, at the same time, one of the most popular uses of water, is, the water-dressing and the poultice. These remedies are essentially relaxing in their operation on the skin; they quiet nervous irritability and muscular contractility, and in this way tend to alleviate the pain and heat of local inflammation. But you will perceive that this state of relaxation may be carried to the extent of producing weakness and debility of tissue, and then the remedy which a few days before was of the greatest utility has gradually merged into a cause of disease. Herein you will see the explanation of a cluster of ekthymatous pustules or small boils rising up around a furuncle or a carbuncle that has been long poulticed; and you will also comprehend an occurrence of frequent experience, namely,

a kind of permanent ekzema, maintained by water-dressing and oiled silk.

ALCOHOL we employ as a refrigerant for subduing the heat and burning of local inflammation, and especially in the diluted form to which we give the name of evaporating and cooling lotion; it is also a stimulant, and by that property controls and diminishes the relaxing effects of lotions in general. As a solvent of certain substances, such as camphor, soap, and perchloride of mercury, it is of much practical usefulness in enabling us to employ remedies which are insoluble in water alone, and would otherwise be inefficient. We sometimes rub down a drachm of alcohol with an ounce of the benzoated ointment of oxide of zinc for the sake of the cooling effect produced by evaporation; a thin fold of linen dipped in a lotion containing alcohol, will reduce the heat and soothe the pruritus of an ekzema capitis, a result of no mean consequence in an unreasoning and irritable infant; the combination of alcohol with soft soap and tar, made known to us by Hebra, is a remedy of great value; and the spirituous solution of the perchloride of mercury, familiar to all as Gowland's lotion, is also an excellent remedy.

POWDERS are useful to relieve heat and irritability of the skin, and also to absorb moisture; they are cooling and desiccant, and by combination may be made antipruritic and mildly stimulant. We recognise their value in erysipelas, in the popular application of a layer of wheaten flour by means of the dredger; in the starch-powder and fuller's-earth employed in the excoriations and erythemata of children and also of adults; and in the moderately stimulant properties of the pulvis cinchonæ in erythematous burns and scalds. The principal forms of powder suitable to cutaneous purposes are, starch, the pollen of the lycopodium, zinc, calamine, silicate of magnesia or French chalk,

and silicate of alumina and soda, or talc, &c.; and with these may be mixed other remedies, such as camphor, carbolic acid, and perchloride of mercury. Powder forms the lightest kind of dressing that can be applied to the cutaneous surface; it excludes the atmosphere, maintains a normally dry state of the skin, and is easy of removal. But when these conditions are altered, it may become an irritant; as in cases where exudation is copious, and the powder masses together, or where it cakes and dries up into hard and rigid clods.

SOAP is a detergent and a solvent of the epidermis; it is therefore the means that we commonly have recourse to for the sake of removing impurities, such as discharges, crusts, and epidermic and sebaceous concretions and deposits. And it is also a stimulant; and we may remind you that moderate stimulation is equivalent to a corroborant or tonic action; a tonic prescribed for internal use is a stimulant; externally, also, the stimulant is a tonic when properly employed, and soap may be regarded as the natural tonic of the skin. There would be a great mitigation of cutaneous disorders if this truth were accepted generally, and as generally acted upon; for to prejudice against the use of soap may be traced a very considerable number of diseases. Soap is also made available as the vehicle of several medicinal substances; for example: glycerine, camphor, tar, carbolic acid, petroleum, and sulphur; and the soaps, by these additions, may be soothing and softening to the skin, or stimulant and desiccant, or even irritating. Price's glycerine soap is one of the best of the softening soaps, and the detergent and stimulant principles of soap are well illustrated by the *tinctura saponis cum pice* of Hebra in its application to the treatment of lepra.

GLYCERINE, from the property of retaining its moisture and resisting evaporation, is very valuable in a dry and parched state of the skin; for the

same reason it is a useful adjunct to lotions : it is also important from its property of holding other substances in suspension or solution, and of assuming a semi-solid, or rather gelatinous form, when a small quantity of starch is added to it, and the mixture is subjected to a temperature of 240°. The British Pharmacopœia gives to these compounds the name of *glycerina*; a more classical term is one proposed by Dr. Frederic Farre, namely, *glycyria*. We have already mentioned to you the glycerine soap of Price's Company, which contains upwards of 45 per cent., or nearly one-half its weight, of the purest glycerine at present manufactured.

OILS and FATS harmonize with the epidermis and blend with its structure; when smeared on the skin, they form a dressing, which, like a varnish, is almost impermeable; it is to a great degree impermeable from within, and therefore it preserves the natural moisture of the skin; and it is equally impermeable to the atmosphere from without. We have been in the habit of comparing a thin stratum of fat with a water-dressing of the lightest and least injurious kind, and we may remind you that it was the chief protection on which the ancients relied for the preservation of their wines. The only word of detraction that can be urged against oil and fat is their tendency to undergo decomposition by exposure to the air, and so to generate the fatty acids which are irritating to the skin; in popular phrase, the fat becomes rancid. But, the "vanity of woman," as old Celsus observes, the demand which the fair sex have made from time immemorial upon the inventive genius of man to supply them with the means of improving and securing their beauty, has furnished us with a contrivance to prevent the rancidity of our oils and of our ointments. First used by the French for the perfection of their pomades, gum benjamin was

suggested by ALEXANDER URE, to the celebrated house of JACOB BELL for the preservation of their ointments. It was first applied to the oxide of zinc ointment for our purposes, and has since been extended to the lard of which ointments are composed, and equally to oils. The British Pharmacopœia has latterly adopted its use, and we may almost say that no ointment or oil is suitable for application to the skin that has not been previously benzoated. As a maintainer and regulator of the surface temperature of the body, oils and fats possess remarkable virtues and remarkable power; with some of the nations of the world, oil is the principal article of costume; and, occasionally, to an under-garment of oil they superadd a dressing of desiccant powder.

ACIDS and ALKALIES sometimes enter into the composition of our local remedies to relieve irritation and pruritus; sometimes as stimulants; sometimes to prevent the formation of crusts, or as solvents of the surface of the epidermis; and sometimes to remove scales. Distilled vinegar and hydrocyanic acid are both antipruriginous; sulphurous acid and acetic acid are stimulants. A soda-bath or lotion is sedative and detergent; *sapo mollis* or *sapo viridis*, is, by virtue of its alkaline composition, an admirable remedy for the removal of concretions and scales; and ammonia is often a valuable stimulant.

VESICANTS are represented by cantharides in various forms—in ethereal and acid solution, and also in solution and suspension in fat. We rarely have occasion to raise a blister; but sometimes, as in *chloasmata* and *melasmata*, we are called upon to induce desquamation. And we further make use of cantharides as a means of producing stimulation short of vesication. Vesication may also be produced by ammonia, by kreosote, and by the *oleum sinapis*; but these, like the preceding

remedies, we employ only for their stimulant properties.

CAUSTICS are acids or alkalies, or their salts; of the former we have the three mineral acids, nitric, muriatic, and sulphuric, chromic acid, and arsenic; the principal acid salts being the nitrate of silver and mercury, and chloride of zinc. Of these the most important is the nitrate of silver, and next to the nitrate of silver the potassa fusa, either solid or in solution. For certain diseases of the skin, caustics must always be ready to your hand; for example, for lupus, for epithelioma, for angioma, and for morbid growths; and we will venture to say that you will find none more useful than the caustic potash. Arsenic is sometimes employed as a caustic for cancer; but we believe it to be inferior to potassa fusa and chloride of zinc, and dangerous, from the liability of absorption into the system.

Under one head may be included the VEGETABLE PRODUCTS: wheaten flour, oatmeal, starch, and linseed. Wheaten flour we have already mentioned to you as a remedy for erysipelas. Oatmeal in the form of a thin gruel is a valuable fomentation, tranquillizing and emollient. Starch is the principal constituent, the diluent, in fact, of our cooling and desiccating powders; in decoction it is, like gruel, soothing and sedative, whether as a fomentation or as a bath; and as a jelly, in its cold state, and enclosed in a muslin bag, it constitutes a valuable poultice. Linseed also is an excellent fomentation when used in decoction, and our best poultice when prepared with the meal.

Other products of the vegetable kingdom are poppy capsules, bitter almonds, camphor, seeds of the stavesacre, iodine, resin, and tar. A decoction of the capsules of the *poppy* is a valuable sedative fomentation. Emulsion of *bitter almonds*, by virtue of the contained prussic acid, is also a sedative in pruritus. *Camphor*, in powder, soothes the pungent

heat of erythema, relieves itching, and is a mild stimulant to the skin; and in the form of spirituous solution, it enters into the composition of our sedative lotions. The seeds of the *stavesacre* are an efficient substitute for sulphur in the treatment of scabies, and may be used either in tincture or in ointment; which are also antipruritic.

IODINE is a discutient, and is employed in the simple state of spirituous solution or tincture, in solution in glycerine, or in the form of iodic salts of potash, sulphur, lead, or mercury. As a tincture it produces stimulation of the skin and desquamation of the epidermis, and by these properties is useful in the removal of discolorations, such as chloasmata and melasmata, and thickenings of the epidermis, for example, callosities and corns. Its combination with sulphur, the iodide of sulphur, is the active ingredient in an ointment, which is the most effectual remedy we possess for the treatment of sykosis.

RESIN is the constituent of one of our most valuable ointments, the yellow basilicon, for the treatment of broken boils, carbuncles, and chronic ulcers.

TAR, in its varied forms of pine tar, juniper tar, birch tar, beech tar, and coal tar, is antipruritic and stimulant. As an antipruritic it is combined with soft soap and alcohol to form a lotion; it is also employed for the same purpose as an ointment in a diluted form; but as a stimulant it may be used in its pure state or as a more concentrated ointment, and applied with more or less friction. In the same group must be included the so-called mineral tar or coal tar and the Barbadoes tar; for coal tar can only be regarded as the product of destructive decomposition of wood, and coal tar has of late been adapted to our purposes by incorporation with soap, and also in the compound which goes by the name of liquor carbonis mineralis.

Also intermediate in origin between the vegetable and mineral kingdom is carbolic or phenic acid, a valuable cutaneous sedative and stimulant. It enters into the composition of a very useful soap; in conjunction with glycerine it forms an antipruritic lotion; and as a lotion, or in combination with ointment, is antagonistic of pyogenesis. Lately it has been used by Dr. Yates, of Kingston, in Canada, as a constituent of an ektrotic ointment in the treatment of variola, and, as he informs us, with remarkable success; and it would seem to be especially valuable wherever a purulent discharge is in process of formation by the skin.

From the MINERAL KINGDOM we derive a store of valuable remedies; for example: zinc, lead, silver, mercury, and sulphur.

ZINC as an oxide is a constituent of our best powder and our best ointment; as a carbonate under the name of calamine, it is also used as a powder and an ointment; and as a chloride it constitutes a useful lotion and caustic. The oxide is desiccative, protective, and sedative. The ointment, in its benzoated form, is also protective and sedative; while the chloride, in various degrees of dilution, is stimulant, antipyogenic and destructive of lowly-vitalized cell-structures.

LEAD is sedative in its more useful forms, namely, as an acetate, constituting the saturnine lotion of various degrees of strength; in the state of carbonate, and used as a desiccant powder; and also as a carbonate, and in combination with benzoated lard constituting an ointment.

SILVER, in combination with nitric acid, and producing a nitrate, is a remedy of considerable importance; applicable in solution in water or nitric ether of every degree of strength, and applicable also in its solid form. According to the manner of its use it may be a sedative, a stimulant, an irritant, or a caustic. In an irritable state of the tissues no

remedy restores the healthy balance of action, and quiets refractory nervous excitement so quickly as a lotion of nitrate of silver. It converts at once the most perverse irritability into a quiescent normal process and produces the state of calm which is necessary for cure. Hence we find it of service in chronic ekzemata, in chronic ulcers, and in local pruritus. The name of Higginbottom, of Nottingham, is associated with its application to erysipelas, apparently on a similar principle; and it is destructive of lowly-vitalized tissues and thereby assumes the character of caustic. Hebra advises and uses it in lupus, wherein it not only destroys the crude granulations, but promotes a more healthy nutrition of cell growth. But as a caustic for other than the most trivial purposes it is in nowise reliable; and for epithelioma and angeioma should never be trusted.

MERCURY supplies us with a host of valuable remedies, of which we may enumerate the subchloride and perchloride, the latter commonly employed in the form of lotion; and the red oxide, the nitrate, the ammoniated, and the red and green iodide in ointment. The lotion of the subchloride of mercury and lime-water we employ in ulcerating dermatosyphilis. The perchloride of mercury in solution in emulsion of bitter almonds is the famous Gowland's lotion. The ointment of the red oxide diluted with benzoated lard, in the proportion of one to three is the best possible remedy for pityriasis, and the ointment of the nitrate and ammoniated mercury excellent discutients of chronic ekzema. Active inunctions with the mercurial pomade are useful in some forms of syphiloma; the green iodide of mercury ointment is sometimes applied with advantage in lepra; and the acid nitrate is suitable in lupus.

SULPHUR is presented to us as the immemorial cure of scabies, the parasiticide of the acarus

scabiei; and is also of value in the treatment of akne, of gutta rosea, and sykosis. It exists in solution in the liquor calcis pentsulphidi, or solutio sulphuris cum calce, the remedy employed in Belgium for the "speedy cure," the two-hour cure, of itch. As an ointment, we have the simple unguentum sulphuris of the British Pharmacopœia, which is improved in efficacy by the addition of carbonate of potash, and used for a similar purpose. For akne and gutta rosea the best-known remedy is the unguentum sulphuris hypochloridi compositum, omitted by the British Pharmacopœia, and for sykosis, the most efficient local application is the unguentum sulphuris iodidi.

THE CONSTITUTIONAL REMEDIES at our command are: antiphlogistics, aperients, alteratives, and tonics. First among antiphlogistics are effervescent salines, which facilitate secretion and allay irritability.

APERIENTS exist in abundant store among the neutral salts, and especially sulphate of magnesia; in vegetable extracts, such as colocynth, scammony, rhubarb, belladonna, and hyoscyamus; and in the oxides and salts of mercury.

ALTERATIVES are found in sarsaparilla, dulcamara, and tar, in the vegetable kingdom; and among metals, iodine and mercury.

TONICS also occur in great variety, and with an equal variety of uses; some being *assimilative* tonics, such as vegetable bitters and the mineral acids; some *nutritive* tonics, such as cod-liver oil and phosphoric acid; some *blood* tonics, for example iron and perchloride of mercury; and some *nerve* tonics, such as quinine and arsenic.

Of all these remedies we shall have occasion to speak in their application to the treatment of the different diseases, and that occasion will be the most suitable for their further consideration. They will then be ranged opposite the symptoms and the

morbid phenomena which they are called upon to control, and their more attentive investigation and study will awaken a livelier interest than can be the case in their more general and abstract examination.

OUR inquiries have led us, up to this time, to the study of the skin in health and the skin in disease; or, more in detail, to the study of the Anatomy, the Physiology, the Pathology, the Etiology, and the Therapeutics of cutaneous diseases.

We have next to announce to you that the recognized forms of cutaneous disease are very numerous, nearly one hundred in number, and that a necessity thereby arises of arranging them according to some convenient plan; such an arrangement would constitute a *classification of diseases of the skin*. The individual diseases you are not supposed to be acquainted with yet, but the basis of their classification is comprehended in our previous studies of the anatomy, physiology, pathology, etiology, and therapeutics of the skin.

Thus if we take the *anatomy* of the skin as a basis of classification, we might arrange a series of groups under different heads, thus : diseases of

Epidermis	Nerves
Rete mucosum	Papillæ
Papillary layer	Hair
Fibrous layer	Sebiparous glands
Vessels	Sudoriparous glands.

Again, if we were to select the physiology of the skin as our basis, we might form other series of groups, for example : diseases of

Circulation	Secretion
Nutrition	Innervation,

How simple it would be to arrange every known disease of the skin under these separate heads, and the result could not be otherwise than instructive; nevertheless, these are not the framework usually accepted for the purpose, and therefore we proceed to another basis, namely, that of pathology. The pathology of the skin introduces us to those changes of structure which have been denominated *lesions*, and the lesions are so striking in their dissemblances that they very naturally suggested to early nosologists a mode of classification which was accepted many years since with universal approbation and has remained very popular until a recent period. The elemental foundation of the *classification of lesions* is the appearance of the disease; for example, its redness, papulation, vesiculation, pustulation, squamation, tuberculation, or maculation and discoloration. And upon this basis, the celebrated nosologist PLENCK, in the first edition of his work published in 1776, raised up a scheme of arrangement which consisted of fourteen classes, for example:—

- | | |
|-------------|--------------------|
| 1. Maculæ | 8. Callositates |
| 2. Pustulæ | 9. Excrescentiæ |
| 3. Vesiculæ | 10. Ulcera |
| 4. Bullæ | 11. Vulnera |
| 5. Papulæ | 12. Insecta |
| 6. Crustæ | 13. Morbi unguium |
| 7. Squamæ | 14. Morbi pilorum. |

Such a classification as this, so far as heads of groups are concerned, leaves little more to be desired. With the most critical eye, we can discover scarcely anything to be wanting; the glandular apparatus of the skin alone needs a place—the sudoriparous apparatus and the sebiparous apparatus having been unfortunately omitted.

To the classification of Plenck succeeded that of WILLAN, and Willan, it is to be supposed,—repre-

senting a department of medicine which had been neglected since the days of Daniel Turner, nearly a century before,—with the view of presenting to his disciples the philosophy of the skin in the most simple shape, abbreviated the method of Plenck very considerably. It is to be remembered also that we are here dealing with a nosologist, side by side with a practical physician, and that that which might have been considered of importance by the former, may have been thought unnecessary by the latter. But whatever may be the explanation which may find acceptance in your mind, the fact remains the same, that several valuable heads existing in the classification of Plenck, are omitted by our countryman Willan, for example :—*crustæ*, *callositates*, *ex-crescentiæ*, *ulcera*, *vulnera*, *insecta*, *morbi unguium*, and *morbi pilorum*; and we find here a practical illustration of the fact, that diminution in the number of heads does not necessarily conduce to the clearness and plainness of a subject.

WILLAN'S classification, bearing date 1790, is composed of *eight* groups, which he names *orders* of the *class* of cutaneous diseases, and these eight orders contain somewhat more than forty *genera*. The eight orders of Willan are :—

- | | |
|----------------|--------------|
| 1. Papulæ | 5. Pustulæ |
| 2. Squamæ | 6. Vesiculæ |
| 3. Exanthemata | 7. Tubercula |
| 4. Bullæ | 8. Maculæ. |

You will observe in these orders the absence of any place for *vulnera*, *insecta*, *morbi unguium* and *morbi pilorum*; the reason for the omission in the case of *vulnera* is made obvious by reference to the members of that group admitted by Plenck, which are, *excoriatio*, *scissura*, *pressura*, *morsus*, *punctura*, and *ictus ab insecto*. Willan might have concluded that, in the first place, these were not cutaneous diseases

proper; and secondly, that they were surgical rather than medical in their nature; nevertheless, scalds and burns would have been safely located under this head. The insecta of Plenck includes, phtheiriasis, helminthiasis, malis, and crinones; but Willan very possibly omitted them for similar reasons to those we have just stated. Morbi unguium and morbi pilorum, however, are serious defalcations, and the only excuse for their omission must have been the want of knowledge of the anatomy and physiology of the organs concerned, and, as a natural consequence, of their pathology. The crustæ of Plenck, consisting of crusta, eschara, achores, crusta capitis neonatorum, crusta lactea, tinea, mentagra, malum mortuum, exanthema labiale, and exanthema subaxillare, would all meet with a better and more appropriate resting-place among the orders of Willan than by themselves, with one exception, namely, the crusta capitis neonatorum, that is, the concretion of sebaceous matter termed vernix caseosa occurring on the scalp of young infants, which would necessarily be referred to the sebiparous system. The callositates of Plenck, namely, callus, cicatrix, and clavus, are transferred by Willan to his very heterogeneous order, tubercula. Neither can we be surprised that the ulcera cutanea of Plenck, namely, excoriatio purulenta, intertrigo, aphthæ, fissuræ, and rhagades, should have failed to find favour with Willan. For we must admit that we should have been as little disposed ourselves to give them so distinct and prominent a place. All, therefore, that remains to be said as to the comparison of the methods of Plenck and Willan is, that whereas a knowledge of the pathology of the glandular system of the skin would have contributed towards the perfection of the classification of the former, yet, that the latter has helped us as little in the same direction. And while we give expression to our admiration of the system of Willan as adapted to

the century which is past, we must also declare its imperfection, as suited to the wants of the present advancing age.

In 1826 a great step in the forward direction was made in the classification of these diseases by the publication of the work of the distinguished RAYER. Rayer takes as his basis both the anatomy and the pathology of the skin, and was the founder of the first anatomico-pathological classification. Anatomy supplied him with his primary divisions; while his secondary divisions are founded on the pathological lesions.

PRIMARY DIVISIONS.

1. Diseases of the skin.
2. Alterations of the appendages of the skin.
3. Foreign bodies observed on the surface or in the substance of the skin.
4. Diseases primarily foreign to the skin, but which sometimes produce peculiar alterations in that membrane.

SECONDARY DIVISIONS.

- a.* Inflammations of the skin.
- b.* Cutaneous and subcutaneous congestions and hæmorrhages.
- c.* Neuroses of the skin.
- d.* Alterations in the colour of the skin.
- e.* Morbid secretions.
- f.* Defects of conformation and texture, hypertrophies and accidental productions.
- g.* Alterations of the nails, and of the skin which produces them.
- h.* Alterations of the hair, and of the follicles which produce it.

Now, if we compare this ample and admirable classification with those of Plenck and Willan, and especially with that of the latter author, we shall

find nearly the whole of Willan's orders absorbed by the first of the secondary divisions, namely, "inflammations of the skin," which includes the eleven following groups:—

Exanthematous	Papulous
Bullous	Tuberculous
Vesiculous	Squamous
Pustulous	Linear
Furunculous	Gangrenous
Multiform.	

Two years later, namely in 1828, BIETT in his excellent lectures, edited by CAZENAVE and SCHEDEL, fell back upon the pathological scheme of Willan, adding to the original *eight* orders, seven additional ones, as follows:—

Lupus,	Elephantiasis Arabum,
Pellagra,	Sebaceous follicular
Syphilida,	diseases,
Purpura,	Cheloides.

GIBERT, in 1834, confined himself strictly to the eight orders of Willan; limiting the scope of his book almost entirely to that of its title, namely, a practical treatise on the *special* diseases of the skin.

DEVERGIE, in 1854, again, revives the anatomico-pathological scheme so ably planned by his predecessor, Rayer. In the second edition (1857) of his practical treatise on the diseases of the skin, he divides them into:—

Diseases of the skin,
Diseases of the hair,
Diseases of the nails,

including under the first head:—

Erythematous diseases,
 Vesicular and bullous diseases,
 Pustulous diseases,
 Papulous diseases,
 Tuberculous diseases,
 Epidermic, squamous, and horny diseases,
 Sebaceous diseases,
 Chromatous diseases,
 Hæmatous diseases,
 Diseases of vegetable production,
 Diseases of animal production,
 Compound forms.

Thus, gentlemen, you will perceive that the *anatomico-pathological classification* is deserving of our deepest respect; it has been considered and reconsidered by a succession of our most eminent dermatologists, namely, by Plenck, Willan, Rayer, Bielt, Gibert, and Devergie; has existed for nearly a century; and has received such modifications at the hands of its supporters as were likely to conduce to its perfection. Nevertheless, it will perhaps occur to you, that the signs by which the different groups are known, are too superficial, too trivial, and too artificial. When Plenck made distinct groups of vesiculæ, pustulæ, and crustæ, Willan perceived that as crustæ might very possibly be simply a declining stage of vesiculæ or pustulæ, it became necessary to take *the mature condition of the eruption* as the standard of classification; hence, in the hands of Willan, exanthemata, vesiculæ, pustulæ, &c., represented the acme of development of the disease, and the group of crustæ was abandoned as calculated to lead into error. Again, in reference to its artificial character, the anatomico-pathological classification has been compared to the Linnæan classification of plants, and, like the latter, has been accused of being open to the objection of separating rather than of drawing together, and of

affording little information beyond that which tends to diagnosis.

A similar train of reasoning possibly induced Jussieu to dissent from the classification of the vegetable kingdom by Linnæus, and to raise up in its place a system which should draw his subjects together into families possessing mutual dependencies and relationships, in a word, into natural families, and his system was in consequence, termed the *natural system*. An arrangement of diseases of the skin which should prove capable of grouping together diseases similar in their nature, causes, and treatment, was an idea worthy the pains of elaboration. Certain diseases pointed naturally to such a mode of grouping, for example, the diseases originating in the poison of syphilis, in the kachexia of scrofula, and in that of cancer. The question then arose: Would the great bulk of diseases of the skin be equally submissive to a similar arrangement? The honour of making the effort is due to ALIBERT who in the year 1810, published his classification; in this classification he grouped together the whole of the diseases of the skin under twelve heads, which he termed the twelve branches of the "Arbre des Dermatoses." The basis of his system derived nothing from anatomy, it was purely *pathological*, and for the most part dermato-pathological; its divisions being as follows:—

Ekzematous	Syphilous
Exanthematous	Strumous
Tineous	Scabious
Dartrous	Hæmatous
Cancerous	Dyschromatous
Leprous	Hetero-morphous.

The term ekzematous, Alibert employs in a sense peculiar to himself, namely, as synonymous with "eruptive," and quite independently of the disease

ekzema; it represents, in fact, eruptive diseases or eruptions, such as erythema, erysipelas, pemphigus, herpes zoster, urticaria, anthrax, furunculus, &c. The exanthematous dermatoses are:—variola, varicella, roseola, rubeola, scarlatina, &c. The tineous dermatoses are the affections of the tinea family. Then comes the family of the *dartres* or *tetters*, to which belong lepra, psoriasis, pityriasis, akne, sykosis, impetigo, and lupus. The cancerous group speaks for itself. The leprous group is devoted to elephantiasis. The syphilous, strumous, and scabious groups are also self-confessed. The hæmatous group is represented by purpura. The dyschromatous group includes discolorations; and the heteromorphous group, such diseases as fail to fit in nicely with the preceding groups.

Alibert remained for a long time without a disciple. "There is a fantastic air about his scheme; a tree of dermatoses; the trunk of the tree representing the skin, its limbs the genera of diseases; its branches, species; and the twigs, varieties; he committed the error, moreover, of changing familiar names for others that were new, harsh-sounding, and difficult of pronunciation." Such is the criticism of his countryman Hardy, who, nevertheless, recognizes in the system sufficient points of importance to make it the basis of his own classification. It is, he says, philosophical; it enables us to class the diseases in accordance with their affinities and their diversities; it is, he thinks, the sole truly practical method of considering and treating cutaneous diseases; and he adopts it as a means of throwing up into strong relief the cause, the most characteristic phenomena, and the therapeutical indications, in opposition to fine-drawn distinctions and variable pathological appearances. What matters, he observes, whether an eruption appear in the guise of vesicles or pustules, the essential matter for the true physician, who

studies disease for the purpose of discovering its cure, is to know if it be accidental or constitutional; if it will disappear spontaneously at the end of a given time, or if it be curable only by a well-conceived and steadily-pursued course of treatment.

After such a commentary, HARDY, in 1856, "proposes a *natural* classification, which resembles in several points that of Alibert; and he groups diseases of the skin into ten classes," thus :—

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|--------------------------|------------------------|
| 1. Maculæ; difformitates | 6. Dartres |
| 2. Local inflammations | 7. Scrofulides |
| 3. Parasitic affections | 8. Syphilides |
| 4. Eruptive fevers | 9. Cancers |
| 5. Symptomatic eruptions | 10. Exotic affections. |

The term "skin," as commonly employed, has a double signification, according as it may be used in a *special* or in a *general* sense; in the former case it applies to the derma only; in the latter it comprehends, besides the derma, the dermal appendages, namely the glands and the hair. Willan, Gibert, and Hardy treat of the diseases of the skin special, in their classification; Rayer and Bielt embrace in theirs the consideration of the appendages also, the former fully, the latter partially; but the skin special is only a part of the skin, and the classifications founded upon it alone, can only be regarded in the light of imperfect classifications. Such, in fact, is the classification of Hardy, who is under the necessity of supplementing his scheme by a heteromorphous group, namely, maculæ and deformities, which is composed of corresponding affections of the—

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|------------------------------|-------------------------|
| a. Chromatogenous apparatus, | d. Papillary apparatus, |
| b. Vascular apparatus, | e. Epidermic apparatus, |
| c. Follicular apparatus, | f. Derma. |

And furthermore, these six groups of his first class contain no less than nineteen species.

But our business is not to criticise ; it is simply to place before you the various schemes of classification by which dermatology has been complicated ; to point out to you the basis on which they rest ; and, if possible, to convince you that there is an unity in the plurality, an unity which is easily fathomed, and renders their comprehension very simple, and their investigation an useful exercise. We propose, in fact, and have undertaken, to classify the classifications, and we trust to be able to make clear, that which, at the first glance seems a heap of confusion. Hardy's classification will serve to illustrate one of the errors of classification which is very objectionable, namely, the profession of dividing a subject with fairness into a small number of heads ; and then giving to one head a preponderating share of the whole. It would be more just, and equally convenient, to adjudicate more fairly in the beginning, by declaring a larger number of recipients. Hardy's classification professedly consists of *ten* heads ; but by taking in the sections, it really presents *sixteen* heads. Again, he has to divide under *six* heads, *fifty* species ; but of these fifty, *nineteen*, or more than one-third of the whole, fall to the lot of the class of sundries accumulated under the head of maculæ and difformitates. But, we make these remarks not in the sense of adverse criticism, but simply to show that classification of diseases of the skin has its difficulties, which are not surmounted by the mere announcement of a new classification. Devergie offers another criticism against existing classifications, which is, that they assign no place to compound forms of disease.

The simplest idea of the pathology of the skin that can be presented to the mind, is that which is conveyed by the more obvious of the appearances of the

morbid changes in the dermal tissues, the so-called lesions, for example, the papulæ, vesiculæ, pustulæ, squamæ, and so forth; hence these terms have become fixedly identified with dermatopathia, and find admission into the ranks of every classification, however much it may be sought to exclude them as the actual basis. We have shown that it is this conception of the pathology of the skin which was seized upon by Plenck and adopted by Willan, as the foundation of their classification; and we may observe further, that such a scheme of arrangement may very justly be termed the

DERMATO-PATHOLOGICAL CLASSIFICATION.

Then, as we have already explained, Alibert invented an arrangement founded on the *mutual resemblances* of these diseases, and distinguished his scheme by the name of *natural* classification; this we may in like manner, and with like propriety, term the

HOMŒO-PATHOLOGICAL CLASSIFICATION.

And in the third place we have to call your attention to another classification, which is intended to identify the pathology of the skin with that of the general system; this is the arrangement presented to us by Hebra, and this we may fairly designate the

SYSTEMATO-PATHOLOGICAL CLASSIFICATION.

HEBRA was led to the construction of his classification by the desire of developing a scheme which should realize the idea of uniformity of all the diseases of the body, whether cutaneous or systemic. He projected this arrangement in 1844, but he scarcely does himself justice by naming it the *pathologico-anatomical* classification; for we believe that the term which we have just assigned to it more fairly expresses its merits. His groups or classes are

twelve in number, but might, he observes, have been reduced to eleven or even to ten, for the separation of malignant from innocent growths is uncalled for, and possibly incorrect in a histological point of view, while ulcers might have been omitted completely. His twelve classes, therefore, are :—

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|--|-------------------|
| 1. Hyperæmiæ | 6. Hypertrophia |
| 2. Anæmiæ | 7. Atrophia |
| 3. Anomalix secretionis glandularum cutanearum | 8. Neoplasmata |
| | 9. Pseudoplasmata |
| 4. Exudationes | 10. Ulcerationes |
| 5. Hæmorrhagiæ | 11. Neuroses |
| 12. Parasitæ. | |

It will be seen that the two first classes depend upon the amount of circulation in the derma; whether in excess, *hyperæmia*, or deficiency, *anæmia*. The third class is devoted to the glandular ingrowths of the skin, the sebiparous and sudoriparous glands. The fourth and fifth classes comprehend exudations from the bloodvessels, whether of the colourless portion of the blood or of inflammatory products, *exudationes*, or of the red constituents of the blood, *hæmorrhagiæ*. Then follow four classes, comprehending nutritive changes in the skin, namely, *hypertrophia*, *atrophia*, *neoplasmata* (homœoplasia) or new formations of innocent nature, and *pseudo-plasmata* (heteroplasia) or new formations of a malignant character. Next we find *ulceration* of the skin; nerve diseases or *neuroses*; and lastly, cutaneous *parasites*, whether belonging to the animal or to the vegetable kingdom.

It is impossible to reflect upon this scheme of classification without a feeling of admiration for its comprehensiveness; but the thought involuntarily intrudes itself, that it may be too general and too comprehensive, that it is fitted for the master and

for the professor rather than for the student and the practitioner. The student demands a simpler and easier introduction to the study of dermatopathia; the practitioner one which is more practical. If we were to analyze the scheme critically, we might find that hyperæmiæ includes only a part of the hyperæmic diseases, and that exudation is very commonly present wherever hyperæmia exists; hence, a further illustration is required than that which is conveyed by the mere designation of the class.

In our own early studies of dermatopathia (1842) we endeavoured to correct the omissions of Willan by taking the anatomy of the skin as our basis, and grafting upon this foundation a pathological arrangement of its diseases: thus we proposed in the first instance *four* primary divisions, consisting of:—

1. Diseases of the Derma
2. Diseases of the Sudoriparous Glands
3. Diseases of the Sebiparous Glands
4. Diseases of the hair and hair-follicles.

The diseases of the *derma* were, inflammation, hypertrophy of the papillæ, and disorders of the vessels, nerves, and chromatogenous function. The diseases of the glandular apparatus included, aberrations of secretion, aberrations of elimination, and inflammation of the glands. And the diseases of the capillary organs, aberrations of growth, quantity, colour, and direction, together with derangements of formation and disorders of the follicles.

But however complete, for scientific purposes, a classification may be that is founded on a structural basis, the practitioner cannot fail to experience a yearning desire to possess himself of an arrangement that shall lead upwards to a practical purpose; in fact, to the treatment of disease. It was this desire

that prompted us, in 1851, to publish a scheme founded upon the supposed cause of these diseases, and which we named "etiological classification." According to this plan, we divided diseases into such as arise from—

1. General causes; *e.g.*, nutritive, assimilative, and nervous debility
2. Special external causes
3. Special internal causes
4. Poison of syphilis
5. Poisons of unknown origin.

But a new train of thought was suggested to us by some researches into the statistics of cutaneous disease, with which we were engaged in 1864. In an analysis of a large number of cases we found *one* disease, namely EKZEMA, stand forth so prominently before all the rest, occurring in the ratio of nearly thirty-four per cent. (33·54), that is, one-third of the whole number of diseases of the skin,—that we were led to believe that, both for educational and practical purposes, ekzema should be made the standard of cutaneous disease, the first to be studied by the student, the chief to be comprehended and mastered in all its details by the practitioner. In other words, the practitioner who knows ekzema alone, already knows one-third of all the diseases of the skin; for every third case that comes before him will probably be a case of ekzema. Here, it must be allowed, there is something practical; and there would be something practical in a classification which should be founded upon this idea; practical, in medicine, is synonymous with *clinical*; and the reality is brought home to us when we have placed before our minds the idea of a "clinical classification." Moreover, ekzema is essentially a multiple disease, and in the subdivisions of Willan its varieties would find, indeed have found, a place in each and every

one of the eight orders of that classification ; so that in the study of ekzema alone, we are enabled to observe the pathological lesions which form the basis of the entire classification of Willan ; for ekzema is constantly *papulous*, sometimes *squamous*, frequently *exanthematous*, often *bullous*, very commonly *pustulous* and *vesiculous*, sometimes *tuberculous*,* and occasionally *maculous*.

Need we tell you, gentlemen, that with these reflections forced upon our contemplation, the CLINICAL CLASSIFICATION became a necessity of our mental organization ; and we now place before you the results. Indeed, as we have before said, upon this plan we teach ; upon this we practise ; and upon this we propose to arrange the subjects of our lectures. Our clinical classification of cutaneous affections comprehends the—

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|-------------------|-----------------------|
| A.—1. Ekzematous | D.—10. Exanthematous |
| 2. Erythematous | 11. Syphilitic |
| 3. Phlyktænous | 12. Elephantous |
| 4. Dothienic | E.—13. Chromatopathic |
| B.—5. Neurotic | 14. Epidermic |
| C.—6. Nutritive | 15. Onychopathic |
| 7. Leprous | F.—16. Trichopathic |
| 8. Strumous | G.—17. Steatopathic |
| 9. Carcinomatous | 18. Idrotopathic |
| H.—19. Traumatic. | |

You will observe that we have divided our nineteen groups into *seven* collective groups or families, of which A represents simple inflammation of the skin ; B, affections of the nerves ; C, disorders of nutrition ; D, blood-poisons ; E, affections of the epidermis ; F, affections of the hair ; G, affections of the glands ; and H, injuries of the skin. The groups are all pathological, and several enjoy the advantage of being homœopathological. While, if we were dis-

* *Vide* Chapter IV. and Index.

posed to attach any importance to a small number of heads, we might say that the clinical classification is composed essentially of eight groups only, the same in number but more comprehensive than those of Willan himself; for example:—

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|-----------------|-----------------|
| 1. Inflammation | 5. Epidermic |
| 2. Neurosis | 6. Trichopathic |
| 3. Nutrition | 7. Adenopathic |
| 4. Exanthematic | 8. Traumatic. |

The CAUSE of cutaneous diseases, actual or presumed, has in its turn suggested to the mind of thoughtful men several schemes of classification. The mother idea of *constitutional* or *local*, had already attracted the attention of the Fathers of Medicine; and, at this moment, you will be frequently interrogated by your patients as to the fundamental cause of the disease, namely, whether existing in the skin, or in the system. As a knowledge of the cause of disease is the only rational foundation of treatment, the subject is not without its interest and importance. Lorry, for example, in 1777, adopted for the arrangement of the subject of his “Treatise on Cutaneous Diseases,” an *etiological classification*. He divided those diseases primarily into—

1. Symptomatic affections; or such as were determined to the skin by some internal disease;
2. Idiopathic affections; or such as originate in the skin itself;

And in both of these groups he treated separately of diseases attacking the general surface, and diseases of parts of the surface only. The sub-groups of his primary division are—

Acute affections, not critical; acute affections, critical; and non-acute eliminatory affections.

While those of his second group are—

- Diseases involving the entire organization of the skin ;
- Diseases producing deformity ; and
- Diseases resulting from poisons ;

The diseases of particular parts of the skin being those of—the hair and scalp ; the face ; the trunk of the body ; and the limbs. And to this same category of classification may be added our own arrangement of 1857, namely, into general and special causes, external and internal, syphilitic, and others of poisonous origin.

A classification, to be a classification, must present a certain homogeneity of character ; its primary divisions should be capable of comprehending every possible form of the objects to be classified ; and, therefore, its groundwork must necessarily be very general. *Simple* and *general* are the terms properly applicable to a sound classification ; but there exists a great temptation to nosologists of special subjects to compress more than enough into their classifications, and thus give them a heterogeneous character ; and this is especially the case when the assumed basis of the classification is itself uncertain in its nature. Hence the difficulty, and we might almost say, the unfitness of “cause,” as a foundation for a general arrangement. In the word cause, different men may see different things, and, as you know well, there really exists a great variety of causes ; there may be a primary cause with a succession of secondary causes, a proximate and a remote cause, a predisposing and an exciting cause, a positive cause and a theoretical cause. Therefore you will perceive an obstacle in dealing with such classifications ; and understand the difficulty which we feel in our endeavour to present to you a classification of classifications.

An able, but imaginative, French dermatologist,

BAUMES, published in 1842 a work entitled "New Dermatology," founded on "a new medical classification." Baumès begins by assuming a distinction between dermatology and dermatography; his dermatological considerations comprehend his special views of a new etiological classification; the dermatographical part of his work is simply the ordinary description of cutaneous disease. In disease of whatever kind he recognizes deranged vital action concentrated in the suffering part, and this theoretical condition he distinguishes by the term "*fluxion*." In what other way, he observes, can we explain a phenomenon of hourly occurrence,—a suppression of hæmorrhoids, succeeded by a bilious disorder; this by an epistaxis; epistaxis by pain and swelling of the joints and muscles, otherwise a rheumatism; rheumatism by a cutaneous eruption; then a neuralgia; afterwards a diarrhœa; the whole concluding with a return of the lost hæmorrhoids? The hæmorrhoids, according to him, are the expression of a deranged vital action; and the cure of the substitutive disorders, is the restoration of the hæmorrhoids; in these phenomena he perceives nature's cure, and he goes no further; the phenomenon, the fluxion, he takes to be an unknown quantity, an *x*, a given starting-point; although he admits, that as the nervous system is the most likely repository of vital force, the phenomenon may, in its origin, be essentially neurotic. So absorbed is Baumès in his attractive theory, that he ventures to repudiate pathological considerations altogether, one may say, he observes, that pathology is a complete nullity. Having, therefore, settled his unknown quantity, his *fluxion*, he proceeds to distinguish seven forms of fluxion, namely:—from exterior cause, reflex, substitutive, eccentric, diathetic, idiopathic, and complex; and these supposed causes he applies to the different forms of disease accumulated in the several orders of Willan.

Our accomplished contemporary BAZIN proposed in 1855, a new method of viewing cutaneous diseases; he objects to the methods of Willan, Rayer, and Alibert, that they confuse together the disease, the affection, the lesion, and the symptom. It may not have occurred to you before that such a distinction as Bazin refers to, really exists; but if we take any one disease, such as ekzema, to test his argument, we shall perceive that the *disease* implies the cause, the *affection* the assembled characters which distinguish the disease, the *lesions* the objective phenomena, and the *symptoms* the subjective phenomena. Hence Bazin entitles his work, published in 1862, "Lectures on the *Generic Affections* of the Skin;" he insists on the necessity of searching out in every affection its primitive element, its kind, and its nature. And he proposes as an illustration of his views, to divide cutaneous diseases into two primary classes, namely:—

1. Affections in course of evolution; and,
2. Affections arrested in evolution.

The first class embraces two orders, external cause and internal cause; and the second, accidental and idiopathic cause. As may be inferred, the diseases of internal or constitutional cause greatly predominate over the rest, and in this order we find eight sections and numerous subsections. You may judge of the nature of the sections by their titles, for example, they are:—

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|------------------------|--|
| 1. Pestilent | 6. Hæmorrhagic |
| 2. Febrile | 7. Symptomatic of constitutional disease |
| 3. Exanthematic | 8. Symptomatic of diathesis. |
| 4. Pseudo-exanthematic | |
| 5. Phlegmatic | |

Here, gentlemen, you will see evinced one of the faults of the medical classifications; the accumula-

tion under a single head of a large majority of the whole of the diseases of the skin; and how can it be otherwise, the symptomatic affections are undoubtedly more numerous than the idiopathic affections, and the symptomatic affections necessarily embrace every variety of pathological change of which the skin is susceptible. Thus under the seventh *section* of the second *order* of the *first* class we find included five important *subsections* or genera, namely :—

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|-----------------------|-----------------------|
| <i>a.</i> Herpetides | <i>c.</i> Scrofulides |
| <i>b.</i> Arthritides | <i>d.</i> Syphilides |
| <i>e.</i> Leproides. | |

And these five genera, or rather the first four, embody the very essence of Bazin's classification; the very essence of the originality which he claims as especially his own. We may therefore inquire a little further into the nature of his views.

At the present day it may strike you as self-evident, that diseases should be divided into dependent and independent entities. You will possibly also admit, that when the Physician, invoking the inspiration of knowledge to unravel the significance of facts, perceives the substitutive relation of hæmorrhoids, gastritis, epistaxis, rheumatism, ekzema and neuralgia occurring in successive sequence, he should be led to conclusions similar to those put forth by Baumès; conclusions, possibly, more nearly approaching the truth than many of the accepted theories of the day. You would also regard with interest those phenomena by which we were ourselves led to establish a relation between assimilation, nutrition, and neurotic aberrations, with certain forms of disease; and which, in the mind of Bazin, have suggested the otherwise perplexing terms, herpetism, arthritism, and scrofulism. By herpetism is meant an original tendency to pure

cutaneous disease; by arthritism a tendency to cutaneous disease originating in the gouty, the rheumatic, and the lithic mal-assimilation; and by scrofulism a tendency to cutaneous disease dependent on aberrant and defective nutrition. But, alas, however interesting the association, and by other terms the facts have been very long and very generally known, how slight a basis is here on which to found either a classification or a reputation. We should esteem any one of you a dunce and unworthy our teachings, who should treat the ekzema of the nutritive and scrofulous period of life, as you would that of the mal-assimilative, the arthritic, and the rheumatismal period; neither should we hold you harmless if you submitted the uncomplicated diathetic ekzema to a similar treatment with the rest. These, gentlemen, are considerations which crop out in abundance in the therapeutical management of our diseases, and hardly, as we think, belong to classification at all, although forced into it by our distinguished colleague. Of all the classifications which have come before us, there is scarcely to be found one which departs more from that simplicity which we consider essential to a classification, nor deserves more the accusation of being a heterogeneous classification, than does the classification of Bazin.

CHAPTER II.

EKZEMA.

HAVING passed in review the general pathology of the skin, together with the general principles which should guide us in its treatment, and the various schemes of classification of its diseases, we propose to introduce you to a knowledge of the special cutaneous affections by the aid of a very simple and practical arrangement; one which is suggested, in fact, by the diseases themselves, such as they are presented to us on the integument of the patient, and such as they occur to the physician by the bedside; and this latter conception of the plan has suggested the term by which we designate this arrangement, namely, *Clinical Classification*.

The Clinical Classification distinguishes one disease as infinitely more common than all the rest, and not less important in reference to its symptoms, to the amount of suffering which it occasions, and also to its treatment; that disease is the *itching*, or rather the *scratch-impelling disease*, the *psora* of the Greeks, the EKZEMA of modern medicine. Not that ekzema is the sole pruritic affection of the skin, for we meet with itching in urticaria or knidosis, and also in prurigo, in scabies, and in simple pruritus; but ekzema, and particularly the dry and squamous form of the complaint, realizes, more than any other, the idea which is conveyed by the word *ψωσις*, to rub or scratch, from which is derived, in the first place *psora*, and secondly *psoriasis*.

The essential nature of ekzema is, inflammation

of the skin; inflammation with more or less superficial prominence, more or less effusion of the colourless part of the blood, more or less displacement and disruption of the cuticle, more or less suppuration, and more or less pruritus. It is easy, therefore, to distinguish ekzema from all other affections of the skin when the whole or several of these symptoms are present, and, with a little care and observation, it may also be recognized when one or two only of the symptoms are developed. Thus, if we find associated, redness and pruritus, we may have a suspicion of ekzema, but no certainty from those two symptoms alone, because redness and pruritus are, in an equal degree, the symptoms of several forms of erythema and especially of urticaria; but if there be added to redness and itching a moist exudation, or a desquamation of the epidermis, we may be sure that the case before us is an ekzema. Again, if we meet with an example in which we find combined, redness with itching and vesicles, the probability is that we have to deal with a case of ekzema, but not so necessarily, for the affection may be herpes or even erysipelas, and it becomes needful to know the special distinctions of the two latter diseases in order to avoid the danger of an incorrect diagnosis. This, in fact, is a part of our labour and study, and with moderate attention and observation the chance of such error will be impossible.

You will, gentlemen, appreciate the necessity of being able to distinguish ekzema, not only because it is THE eruption, *par excellence*, of the skin, in itself a sufficient motive, from the practical bearings of the disease; but also because it is the standard with which other cutaneous affections are to be compared and their relative importance to be estimated; and moreover is the basis of the CLINICAL CLASSIFICATION. We shall, therefore, at the risk of being thought tedious, recapitulate the diagnostic characters of the disease. First, then, there is *redness*, which is

permanent and not evanescent; secondly, there is *itching*; thirdly, there is *disturbance of the epidermis*, which is either thicker or thinner than natural, or cracked and broken up into loose fragments and scales, or lifted up into small vesicles by the effusion beneath it of a serous or sero-purulent fluid; fourthly, the pores of the skin may be raised up into papules by congestion and infiltration of the coats of the follicles; fifthly, the epidermis may be separated from its bed, and *the derma may be converted into an actively secreting surface*, pouring out a secretion, which is for the most part limpid and colourless, sometimes viscous and opalescent, and sometimes purulent; and, sixthly, *the derma may be swollen, or thickened, or indurated*, and at the same time superficially ulcerated, or chapped and cracked. We say nothing of the crusts produced by the desiccation of secretions, for the reason, that they are mere accidental consequences, and simply cover or conceal the pathological states included in the last two members of our definition.

Now, it is perfectly possible for all these signs to be present at the same time, and then the diagnosis of ekzema is self-evident; but the art of diagnosis is to determine the identity of a given disease by the aid of the smallest number of signs, and to this object we direct your attention. By-and-by, we shall have occasion to explain that the diagnosis of ekzema is very much facilitated and corroborated by other known phenomena of the disease; for example, situation, or, as the botanists term it *habitat*; but for the present our purpose is simply to point out the visual or objective signs by which the disease may be recognized, associated with that almost universal subjective sign or symptom, namely *pruritus*. There is, however, another subjective condition which is of great importance in the diagnosis of ekzema, and that condition is *time* or duration. At its earliest appearance, ekzema may

be nothing more than a redness or erythema; but an erythema by mere lapse of time and disturbed formation of the epidermis may become an ekzema; for example, a chronic erythema will be attended with infiltration and thickening, it will itch, the nails produce an excoriation, the excoriation exudes, and then we have an ekzema with four out of our six enumerated signs; namely, redness, itching, desquamation, and exudation. Or, let us take a more homely example:—in the cold weather the back of the hands is apt to chill, hyperæmia succeeds, with infiltration and induration; then come—itching, exudation, and chapping. The case which began as erythema has merged into ekzema; for erythema is a mere transitory redness, only occasionally followed by exfoliation of cuticle; but in the instance which we have taken for illustration there are—redness, pruritus, desquamation, exudation, and fission; or nearly the whole of the characteristic signs and symptoms of ekzema.

The most striking picture of ekzema that we can present to your imagination is one which formed the subject of an essay read before the British Medical Association in 1856,* namely, ekzema infantile. It may be premised that ekzema displays the self-same characters at whatever age, and in whatever region of the body it may be developed, and that any variation of those characters it may present must be ascribed to the greater or less degree of irritability of constitution or tissue of the individual or to the duration of the disease. Infancy is a period of great irritability of constitution and of tissue, and ekzema infantile may be expected, as, in fact, is the case, to present the highest degree of development, and the utmost range of variation of which the disease is susceptible. On the other hand, ekzema infantile comes before us as an idiopathic

* We have so frequently been asked for a copy of this paper, that we have reprinted it in Chapter IV. of the present volume.

affection; as an affection in which the cause and effect of the disease are easily demonstrable; and with the extremest degree of variety of manifestation of which the skin is capable. Thus in ekzema infantile the hyperæmia and consequently the redness may be intense; the exfoliation and desquamation of cuticle may be excessive; the follicles, as well as the interfollicular portion of the skin, may be hyperæmiated and infiltrated so as to produce papulæ; the cuticle may be raised in minute vesicles more or less discrete or coherent; some of the vesicles may contain pus; the cuticle may be separated so as to present extensive excoriations; the excoriated parts may secrete an abundance of limpid and purulent fluid; the fluid secretions may dry up into crusts—of various colour, density, and thickness; fissures and superficial ulcerations may be formed in the derma; and, as secondary consequences, lymphatic glands may become enlarged, superficial abscesses may be formed, and furuncles may be produced. Moreover, there may be more or less of swelling, and less or more of pruritus; the latter being, in general, excessive.

It is not, however, because ekzema often presents its severest form of manifestation in infants that we have selected as our example ekzema infantile; but, because we are enabled, in the infant, to study ekzema as an idiopathic affection, to see it often covering the whole or the greater part of the integument; and to note its changes in degree, and its variations of form, not merely at different periods of its existence, but at the same moment in different regions of the body. In this observation we have an apt illustration of the varieties due to habitat or situation; thus, in one part, say the head and face, we may find the hyperæmia, the swelling, and the infiltration, the greatest in amount; in another, as the trunk and limbs, the follicular hyperæmia or papulation may be most striking; in a third, as in

the flexures of the joints and in the recesses of folds and contiguous parts, secretion may most prevail; while in other parts again the tendency may be greatest towards desiccation and desquamation.

It was the contemplation of these variations of form of the same identical eruption that, no doubt, suggested to Hebra the use of subjective terms which should convey to the mind a notion of the particular kind of variation. This suggestion is one of great value, and we approve so highly of our learned colleague's proposal that we have ourselves adopted a similar principle of nomenclature. The terms employed by Hebra are: *squamosum*, *papulosum*, *vesiculare*, *madidans*, and *impetiginosum*; but we have given a preference to the following, namely:—

Ekzema erythematosum	Ekzema ichorosum
„ papulosum	„ pustulosum
„ vesiculosum	„ squamosum.

It is important to be understood, that these terms do not refer to kinds of ekzema, but simply to modes of manifestation or forms of ekzema; and very commonly, very usually in fact, the whole of these forms may be present together upon the same patient. But, on the other hand, the eruption very frequently exhibits a predominating tendency towards one or other of the forms in question; it may be that the case is chiefly or solely erythematous, or papulous, or vesiculous, or ichorous, or pustulous, or squamous; and then these terms are of value, and indeed necessary to the intelligent intercommunication of our ideas.

The earliest stage of ekzema, as of other phlegmasiæ, is generally hyperæmic, that is, it is erythematous, and we might be in doubt whether to consider it an erythema or an ekzema; and for some days it may retain an uncertain character. If,

however, its permanence, its teasing pruritus, the condensation of the derma from infiltration, the exudation of moisture on being scratched, its locality, its occurrence in a person diathetically predisposed to ekzema, determine the diagnosis in favour of the latter complaint, the case will be one of *ekzema erythematosum*. *Ekzema erythematosum* may occupy the whole surface of the body more or less extensively, or it may be limited to a spot, and be simply local. Let us take an example of the latter kind as another illustration of the phenomena of ekzema. A person has a boil on the leg and applies a poultice for its relief; the nerve-force of the skin is weakened by the prolonged influence of moisture and heat, hyperæmia follows, accompanied with desquamation of cuticle and pruritus; in fact, *ekzema erythematosum* is established, and without proper treatment may become permanent, and assume other forms.

Sometimes the most striking feature of an ekzema is the presence of minute papulæ, united into patches of varying extent by means of an erythematous base. In such a case the hyperæmia is in the first instance follicular, the congested follicles swell into papulæ, the hyperæmia spreads from the papulæ to surrounding papulæ, and in this way a patch of variable extent is produced. This is *ekzema papulosum*. It will be remembered that papulæ produced after the manner described, when they occur alone and without other signs of ekzema, are termed leichen; hence the terms *ekzema leichenosum* and *leichenodes* are synonymous with *ekzema papulosum*; but they are neither so appropriate nor are they so correct as the latter term. The association of scattered papulæ with undoubted patches of other forms of ekzema, is sufficient to establish their identity with ekzema; and this occurrence is nowhere so striking as in *ekzema infantile*; and it will generally be found that

ekzema erythemosum is very rarely present without a sprinkling of papulæ in its immediate neighbourhood. One of the commonest examples of ekzema papulosum that can be adduced is an affection of the back of the hands, which was termed by Willan—leichen agrius. In it we find a cluster of papulæ, circumscribed, united by an infiltrated and thickened base, excessively itchy, exuding a colourless ichor when scratched, and sometimes coated over with a thin crust, formed of desiccated secretions. And this illustration brings to our notice the extreme itchiness of papulæ in general, and the tendency of the papules of ekzema to pour out an ichorous exudation whenever their summits are abraded.

It will be seen that, heretofore, our attention has been engaged by simple hyperæmic congestion, for hyperæmia is, at the same time, the essence of ekzema erythemosum and of ekzema papulosum. In the next place we shall have to occupy ourselves with the phenomena of exudation. We have already spoken of infiltration as it accompanies ekzema erythemosum and ekzema papulosum, which implies a moderate degree of interstitial exudation; but we refer especially, at the present time, to exudation upon the surface of the derma, which raises the epidermis into minute vesicles, and constitutes *ekzema vesiculosum*. The precise seat of the vesicles is the point of greatest vascularity of the derma, namely, the apertures of the follicles, and, around these, several minute vesicles are sometimes congregated, while at other times one only exists. Occasionally, several minute vesicles are blended together, constituting a large vesicle or small bulla; and in certain situations, as on the palmar surface of the fingers and hands, where the cuticle is thick, the vesicles are often coherent and lift up the epidermis to a considerable extent, constituting a multilocular vesicle. It will

be remembered that the minute vesicle is the type of the ekzema of Willan, and the example of the affection selected by that author is a singular one, and one to which he gave a name derived from its cause, namely, ekzema solare. But at the present day we know full well that an ekzema solare may be an ekzema erythemosum or an ekzema papulosum, as well as an ekzema vesiculosum; and also, that ekzema vesiculosum, instead of being the most frequent of the forms of ekzema, and the type of the disease, is in reality the rarest, and almost exceptional.

Of a still more exclusive character is the *ekzema ichorosum*, which pours out an excessive quantity of secretion, generally transparent and colourless, sometimes opalescent, and sometimes purulent. This secretion is remarkable for its viscosity, stiffening, when dry, the coverings which absorb it, and desiccating into crusts, sometimes thin and dense, sometimes thick and spongy, friable or tough, and varying in tint of colour from a yellowish-brown to a honey or amber-yellow, and if blood be accidentally intermingled, deepening in hue to a deep black. The secretion often rises in quantity to a state which may be termed *ichorrhœa*, soaking through dressings and bedclothes, and justifying the designation attached to it by Hebra, of ekzema madidans. Willan is less happy in his synonym, for he terms it ekzema rubrum, pointing to the hyperæmic condition of the derma rather than to the profuse secretion. It may be remarked, in reference to this excessive secretion, that it is periodic, possibly in obedience to a neurotic law, that it presents every variety of degree in quantity, and that, although it generally follows a separation of the cuticle, it may happen without such intervention; the morbid integument, for the time being, seeming to take on the attributes of a mucous membrane.

The production of pus, constituting *ekzema pustulosum*, is another form of exudative pathogenesis, exhibiting a lower standard of vitality of the tissues than the serous and ichorous forms, *ekzema vesiculosum* and *ekzema ichorosum*. In the language of a former age of pathology, the development of pus implies a greater *impetus* of morbid action than the production of a watery secretion; and the formation of vesicles filled with pus was denominated *impetigo*; for the same reason, the combination of the vesicles and ichorous discharges of *ekzema* with pustules or purulent secretion is designated *ekzema impetiginosum*, or *impetiginodes*, and is accepted as a synonym of *ekzema pustulosum*. As at present understood, however, weak resistance and increased force give rise to similar consequences, and the question of *impetus* is one of no importance whatever, and may as well be forgotten.

Ekzema squamosum is sometimes a primary affection, but more frequently the evidence of an *ekzema* of a more than usually chronic character. As a primary affection, we meet with it on the fingers and hands, where a dry, hardened cuticle is the first apparent sign of disorder of the skin. In this case the cuticle cracks and exfoliates in fragments and shreds, and a desquamation is established with little or no redness, and no exudation, but usually with much heat and soreness and considerable itching. In fact, a new pathological element presents itself to our observation in the squamous form of *ekzema*. It is no longer hyperæmia or exudation that occupies a first place in our thoughts, but induration and thickening of the derma, partly due to infiltration of the tissues with the serous constituents of the blood, and partly also to hypertrophic growth. In some instances the hardness and inflexibility of the tissues are such that the derma cracks with the mere movements of the part, as in the case of the joints

and palm of the hands, and sometimes by simple pressure, as on the pulps of the fingers. This is a modification of ekzema which has been termed *ekzema fissum* and *ekzema rimosum*; but a separate designation is altogether unnecessary, excepting for descriptive purposes, for cracking and fission of the derma are an almost necessary associate of the condensation and induration of tissues, which constitute a part of chronic and squamous ekzema. The hypertrophy of the tissues is of a kind that may be termed passive hypertrophy, a mere consequence of the more abundant supply of blood induced by hyperæmia; in these cases, of which the examples are chiefly local, there is a degree of hyperplasia of connective tissue with hypertrophy of the papillæ cutis and a consequent hypertrophy of epidermis, with separation of the broken epidermis in the form of scales. A minor degree of this process, giving origin to scales remarkable for their fineness and thinness, constitutes the affection termed pityriasis; while a coarser example of the same pathological condition is that dependence of psora to which the term psoriasis is properly applicable.

If, therefore, we cast back a glance of review upon the forms of ekzema, we shall find that the governing idea of their division into groups is threefold; namely, hyperæmia, exudation, and desquamation: to hyperæmia belong *ekzema erythematosum* and *papulosum*; to exudation, *ekzema vesiculosum*, *ichorosum*, and *pustulosum*; while desquamation is represented by *ekzema squamosum*. And these distinctions bring to mind the ancient division of ekzema, as represented by its Greek synonym *psora*, and its Latin synonym *scabies*, into *psora* or *scabies humida* and *psora* or *scabies sicca*; *psora sicca* being further distinguished into *psora porrigo*, the equivalent of *pityriasis*; and *psora lepra*, the equivalent of *psoriasis*.

And now, gentlemen, let us ask ourselves the

question: *What is ekzema?* And, by the aid of our foregone examination of the disease, endeavour to arrive at a satisfactory answer. EKZEMA IS A CHRONIC INFLAMMATION OF THE SKIN, ATTENDED WITH DESQUAMATION, EXUDATION, AND PRURITUS. It would be difficult to define the disease in fewer words, and yet these few words embrace all that is really important and special with regard to it.

Then follows as a second question: *What are the varieties of ekzema?* To which we may answer that the essential varieties of ekzema are six in number, namely,—

Ekzema erythematosum	Ekzema ichorosum
„ papulosum	„ pustulosum
„ vesiculosum	„ squamosum ;

these varieties being founded on the predominance in the eruption, of simple hyperæmia, of exudation, or of desquamation. Therefore, if our diagnosis of an eruption lead us, in accordance with our definition, to a diagnosis of ekzema, we must proceed a stage beyond this point and determine whether we shall further distinguish it as belonging to the hyperæmic or vascular group; to that of serous exudation in the form of vesicles, to exudation in the form of an ichorous or purulent discharge; or to that belonging to a state of condensation of the derma, with exfoliation of the cuticle and desquamation. It will soon become apparent to you that these forms frequently represent stages of the same eruption; that, for example, an eruption originally erythematous, has, from the operation of certain causes, such as improper treatment, become ichorous, or purulent, or, it may be, squamous. Moreover, these distinctions have another and a more practical aspect, for the treatment of an erythematous or papulous ekzema must be essentially different from that of an exudative or of a squamous ekzema; and further, if it be your desire to

minimise the existing sub-divisions, you may regard them as limited to three only, namely, hyperæmic, exudative, and squamous.

The six varieties of ekzema which we have just enumerated we have termed *essential*, in order to distinguish them from certain subvarieties which may be considered as *accidental*, and which are to be regarded as mere modifications of the essential pathological forms. We have already drawn your attention to the difference of position of the horizontal and vertical capillary plexus of the skin; of the plexus which corresponds with the apparent and that with the real surface; of the visible and of the hidden; the superficial and the follicular; and this difference is exhibited by certain obvious physical phenomena, which impress a difference of character on the pathological appearances resulting from congestion of its vessels. Thus in the instance of the interfollicular plexus there is no interference with a general and uniform swelling corresponding with the congestion; but when the follicular plexus is distended, the follicular tube is pushed upwards above the surrounding level, and constitutes a papula. We have seen this phenomenon illustrated in ekzema papulosum; and we see it also in a form of the eruption, which combines in itself the erythematous and the papulous type, and which is termed *ekzema marginatum*. Ekzema marginatum is an erythematous blotch, bounded at the circumference by a prominent ridge of papules, sometimes blended together and sometimes separate. The ridge seems to be produced by the centrifugal dispersion of the inflammation; sometimes the included area regains its healthy character, and the ridge alone remains; sometimes the area retains its redness, and is sprinkled over with isolated papules or rings, or segments of rings; and sometimes the boundary margin becomes the point of departure of a belt of ery-

thema bounded as before by a papular ridge. These appearances are often very remarkable, and just as the ekzematous patch is composite in its pathological nature, so also, and in like manner, it unites the pruritic symptoms of the papule and the obstinacy of its habit, with the other characters of ekzema. It is very chronic, lasting often for years, and is situated commonly in the hollows of the body, as of the perineum and axillæ, but sometimes develops its rings upon the limbs. Ekzema marginatum is common in certain parts of India and China, and particularly in Burmah, from which circumstance it is denominated Burmese ringworm. But it also occurs not unfrequently amongst ourselves.

We have also referred to the tendency which exists in the skin to become condensed by infiltration, and to crack and chap when subjected to the ordinary movements of the integument in flexion and extension: it is in this manner that we have formed the cracks and fissures of chapped hands, the rhagades which occur upon the lips, in the commissures of the pudendum, around the anus, in the clefts of the deeper folds of the integument, as behind the ears and between the buttocks, in the flexures of joints, and especially in the flexures and upon the tips of the fingers, between the toes, and in the palm of the hands. And when, as sometimes happens, this fission of the derma is the most conspicuous or sole existing sign of ekzema, we may very fairly term it *ekzema fissum*.

Occasionally we meet with a very interesting physiological phenomenon in relation with ekzema, namely, the appropriation by the skin of the attributes of mucous membrane. Such an occurrence is met with in deep folds of the integument, as of fat persons and children, and on surfaces which are exposed to the combined effects of heat, moisture, and friction. The most striking instances that we at this moment call to mind, were present in the

creases of the neck of an infant, between the thighs of a person of delicate constitution, in the groins, in the axillæ, and between the mammæ and subjacent integument of corpulent individuals. In these cases the cuticle is softened to the state of the epithelium of a mucous membrane, and is moistened by a viscous secretion, sometimes transparent, sometimes opalescent, and sometimes muco-purulent. The special characteristic of the affection is the unbroken state of the epidermis, the morbid secretion being diffused over its surface. To this peculiar form of the disease we have assigned the term *ekzema mucosum*; and not unfrequently, with *ekzema mucosum*, rhagades are found in the deepest part of the groove. This form of *ekzema* sometimes attacks the mucous membrane of the prolabium of the lips; and the desiccation of the morbid secretion gives rise to a horny case: the horny case is generally of a dark-brown colour, and resembles, when removed, one valve of a siliqueous pod.

We are unwilling to countenance such needless terms as *ekzema scabidum* and *ekzema crustaceum*, for, in a few hours, with the aid of a water-dressing, a poultice, or a coating of ointment or oil, these cases may be converted into *ekzema ichorosum* or *pustulosum*, or that compound of the two termed *ekzema impetiginosum*. Nevertheless, in compliment to Willan, we may call to mind that monstrous example of ignorance and neglect, the *crusta lactea*, *porrigo larvalis*, or *ekzema larvale*, and remind you that similar instances will occasionally, even at the present day, be brought under your attention. But, as we have already said, at your second visit they will have acquired a right to a more intelligent and significant term.

Another of the accidental subvarieties of *ekzema* takes its origin in an aberration of interstitial exudation. In every form of *ekzema* there exists a certain amount of serous infiltration into the tissue

of the derma, and often into the tissue beneath the derma, the subcutaneous tissue. Not unfrequently, and especially in the lower extremities, this interstitial exudation prevails to the extent of producing a complication of ekzema with œdema, or in other words, an *ekzema œdematosum*. Such cases are too simple and too frequent to need further comment; but occasionally the œdema is limited to small portions of the skin; and these portions, sometimes isolated and sometimes in clusters or groups, give rise to tubercles, often of considerable prominence. In such a case, there is a general œdema, as also a partial œdema, and the appearance of the affection is altogether so remarkable as to impress itself strongly on our attention. To this form of modification of ekzema we have given the name *ekzema tuberosum*.* And, under the designation *ekzema spargosiforme*, we have described another example of a similar modification induced in the tissues of the skin and subcutaneous textures by intra-exudation, and possibly to some extent by hyperplasia of connective tissue. The result of this combined process in the latter instance was the production of a state of the lower extremities only distinguishable from spargosis cruralis, the bouknemia or elephant leg of the Arabians, or elephantiasis Arabum, by a copious serous transudation from the whole extent of the morbid surface.†

We have already pointed out that interstitial infiltration of the skin giving rise to thickening and induration, conjoined with a copious formation and desquamation of cuticle in small abundant scales, a consequence of prolonged congestion of the derma, is the essence of the chronic affection termed psoriasis, an affection sometimes confounded with lepra, and described with it under the same

* VIDE Chapter IV. and Index.

† Ibid.

name. And in the next place we have to remark that the condensation and hardening of the skin, in circumscribed patches, reaches a degree which we have distinguished as *ekzema sklerosum* (*ekzema coriaceum*). Moreover, there is a third form of thickening and condensation, in which, as a consequence of chronic hyperæmia, a passive hypertrophy of the papillæ of the affected part takes place and a state is induced which may be compared in structure to a wart, *ekzema verrucosum*. Sometimes these patches, both sklerous and verrucous, have an extent of several inches in diameter; they are commonly oval in shape, and are situated for the most part on the limbs. At other times they are small and circular and somewhat conical in figure, attended with troublesome itching and scattered more or less abundantly upon the limbs, and particularly on those of the lower extremity.

Another subvariety is created by an aberration in the kind and in the degree of pain with which *ekzema* is accompanied. Usually the morbid sensations of the eruption are itching, tingling, burning, and smarting, but in certain instances the sensations are real pain, of a neuralgic character and often periodic. We have seen this kind of suffering most commonly in the ichorous form of the affection, wherein the skin is in a state of chronic hyperæmia, softened with discharges or water dressings, deeply red in appearance, exquisitely sensitive, and extremely painful: and upon this morbid condition we have bestowed the name of *ekzema neurosum*.

We have thus introduced to you a somewhat extensive list of subvarieties, each of which has claims on your attention as illustrating some special character or property of the disease. First, there is that singular centrifugal affection, that compound of *ekzema erythematosum* and *papulosum*, the papules

retiring to the circumference and forming an annular boundary, ekzema marginatum; secondly, there is the remarkable tendency of the inflamed derma to crack, ekzema fissum; thirdly, we have presented to us a peculiarity in its habit of secretion, ekzema mucosum; fourthly, we have called your attention to the massive crusts which sometimes conceal the inflamed surfaces; fifthly, we have interstitial effusion giving rise to ekzema œdematosum, tuberosum, and spargosiforme; sixthly, there is condensation and hardening of the derma, producing psoriasis and ekzema sklerosum; seventhly, a passive form of hypertrophy of the papillæ cutis is manifested by ekzema verrucosum; and, eighthly, a state of nerve-lesion in ekzema neurosum; or, if we proceed to assemble these numerous subvarieties in a table, we shall find them admitting of detail as follows:—

Ekzema marginatum	Ekzema tuberosum
„ fissum	„ spargosiforme
„ mucosum	„ sklerosum
„ scabidum seu	„ verrucosum
crustaceum	„ neurosum.
„ œdematosum	

Therefore, gentlemen, if we have succeeded in engaging your attention up to this point, you will not be startled by so copious a catalogue, but will perceive how naturally the subforms distinguish themselves from the forms in chief. All the forms are pathological; the six primary forms claiming to be regular and the subforms irregular.

But our history of ekzema would be incomplete if we were to content ourselves with the investigation of the pathological forms of the disease only. Other subjects of interest are still before us; such as the *distribution* of the eruption on the general surface of the body; and its *regional pathology*, in other words, its especial behaviour in particular parts; for example,

on the head, the pudendum, the hands and feet, and the joints. To this subject we propose next to give our attention.

IN our previous lecture we discussed the general phenomena, in other words, the general pathology, of ekzema; we then proceeded to found on those general pathological phenomena a definition of ekzema; and in the next place we submitted to inquiry its forms of manifestation, its chief forms and its accidental forms, or, if you prefer the terms, its primary and its secondary forms. We have still left for our consideration some interesting features of the affection, relating to its manner of distribution, and also to its regional peculiarities, before we may venture to turn our attention to the etiology and therapeutics of the disease.

DISTRIBUTION OF EKZEMA.—Ekzema in its distribution may be *general* or *partial*. As a general eruption it is much more rare than the partial or local forms; and in its manner of development it may in some instances break forth like an exanthem, *exanthematous ekzema*; or, as most frequently happens, it may begin as a single spot, and other spots may follow more or less quickly until the greater part of the body is sprinkled over with ekzematous blotches: this is the successive form of general ekzema, *ekzema successivum*. General ekzema is most frequently seen in the infant, in whom an unity of sensibility more commonly pervades the whole skin, than in the adult; and, in the adult, when, as a consequence of debility, the conditions of irritability of the skin approximate to those of the infant. But although the eruption may be general, it does not therefore follow that it should be uniform, but on the contrary, the law of variety, and the law of regional modification are rigorously asserted. Thus in ekzema infantile, there may be no part of the surface of the body on which the

eruption is not present; there can therefore be no question as to its being a general ekzema; but the forms will differ in different situations, and locality will be influential in producing other modifications. We shall find ekzema erythematosum in several spots, with scattered examples of ekzema papulosum; even ekzema vesiculosum may be discovered in sundry places; while ekzema ichorosum is conspicuous on the cheeks, the scalp, and the flexures of joints, often associated with ekzema pustulosum; and ekzema squamosum is only absent because time has not been given to the eruption to attain the proper degree of ripening for its manifestation.

Excepting in the infant, general ekzema is so infrequent that it may be regarded almost as an exceptional form of the disease; the eruption in general presenting the character of a partial or local affection. But here, again, it is necessary to observe, that partial or local ekzema is not limited to a single region; it is rarely solitary, but is usually present in several regions at the same time: it may be the fingers and the fissuræ aurium; it may be the head and the flexures of the joints; it may be the back of the hands and the circumference of the anus; or it may be the fore-arms and the pudendum.

Just as ekzema generale or universale, has its two principal forms of manifestation and distribution, namely ekzema exanthematosum and ekzema successivum; so also has ekzema partiale its two governing forms; for example, ekzema diffusum and ekzema circumscriptum. The most usual form of partial ekzema is that in which the patch of inflamed skin fades into the surrounding healthy skin; and spreads and diffuses itself in the adjoining integument without any distinct limit of separation, or possibly blends with neighbouring patches, and so produces a blotch of large size, sometimes involving a considerable portion of the trunk of the body, or of a part or the whole of a limb. It is necessarily irre-

gular in outline, and has no distinct boundary. This is *ekzema diffusum*; and with these characters we find it commonly on the head and face, behind the ears, in the axillæ and groins, and in the flexures of the joints. And this form of the eruption is apt to be mistaken for erythema, and sometimes for erysipelas.

The circumscribed form, *ekzema circumscriptum*, is known by characters the opposite of those of the diffused form; the patches are more or less definite and regular in figure (*ekzema figuratum*), and generally isolated. They are, for the most part, oval or circular in shape, and of variable size, sometimes several inches in extent, sometimes as small as pieces of money—hence the term “*ekzema nummularæ*,” and sometimes of still smaller dimensions. While another of the circumscribed forms is remarkable for possessing an elevated or papulated border, as in the instance of *ekzema marginatum*. The circumscribed figure of the eruption generally indicates a more than usual chronicity of character; and it is amongst these forms that we most commonly meet with illustrations of thickening, hardening, and hypertrophy, as in the instances of *ekzema sklerosum* and *ekzema verrucosum*.

We have already seen enough of this disease to recognize the fact, that one of the most striking of the characters of *ekzema* is its tendency to modification: it is modified by age; it is modified by sex; and it is also modified by situation. The *ekzema* of infants is very commonly general; the *ekzema* of the adult and elderly persons is more frequently partial. In infants we look for the erythematous, the papulous, and more particularly the ichorous and pustulous forms of the affection; in the adult the disease is more limited in its forms of manifestation, and less active; while in old age the squamous form is most predominant. *Ekzema* in the adult female approximates towards the characters of

ekzema infantile, and ekzema in the adult male towards those of ekzema senile. But the modifications caused by situation are so remarkable as to call for separate notice, and to make a demand on our special attention and observation. And for this purpose we may divide the body into certain regions. For example, 1. the head, or hairy scalp; 2. the face, including the ears; 3. the folds of the skin; 4. the flexures of joints; 5. the pudendum and perineum; 6. the mammæ; and 7. the hands and feet.

EKZEMA CAPITIS.—The most frequent forms of the disease seen upon the *hairy scalp* are the erythematous, the ichorous, and the squamous. Vesicles are very rarely met with, and papulæ still more seldom. In the ichorous and suppurating form the hair is matted with discharges, and this, conjointly with the desiccated secretions, gives rise to a hardened crust, which encloses the head as in a case or closely-fitting cap, detains the secreted fluids, and is excessively ill-smelling and offensive, the odour resembling that of valerian. It is, however, only by neglect that such a state can arise, and by proper attention it may be completely obviated. More frequently this state of sordid accumulation of desiccated discharges and matted hair is limited to a part only of the head. Sometimes, when the ichorous exudation is very abundant, it draws the hairs together like a conical pencil, and from the end of these cones the limpid discharge appears to distil in frequent drops; the discharge dries on the cones, and forms upon them a thin, glistening sheath, and to this appearance Alibert gave the fanciful name of micaceous tinea, tinea amientacea, while the glittering appearance of the bundles of hairs reminded him of asbestos, and suggested the term, tinea asbestina. At other times the exuded secretion dries into whitish or greyish friable crusts: the broken fragments of these crusts have been compared to

mortar, and the presence of a number of granules of broken crust has been dignified by the name of *tinea granulata*. Upon such slender threads do the eccentricities of nomenclature sometimes hang, and, strangely enough, common ekzema, with these simple and obviously accidental peculiarities, has been described as though it were the representative of distinct varieties or distinct species.

Gentlemen, we cannot forbear impressing upon you in this place that ekzema is ekzema, and that ekzema capitis is ekzema capitis, whether it occur in the infant or in the adult; and, as ekzema, that it can only present itself to your notice with the forms already described, and with which we hope you are by this time familiar. The instances we have already adduced of magniloquent nomenclature, will prove to you that there is reason for our caution, and that *tinea amientacea*, *tinea asbestina*, and *tinea granulata*, with a host of *porrigos*, are nothing more than examples of a dirty and neglected ekzema capitis; an ekzema that a little soap and water properly applied, or a coating of ointment or oil, would speedily convert into a *tinea mundificata*, and thence ensuing into a *tinea curata*. But while we are on this subject, we must call your attention to another of the vagaries of dermatologists in the matter of nomenclature. You will naturally inquire: What has *tinea* to do with ekzema? The answer is simple enough: Nothing at all. *Tinea* signifies a loss of hair from the breaking of its shaft close to the surface of the skin; as though, in fact, it were eaten away by the larva of the moth or *tinea*. But there is no disease of the hair in ekzema, no breaking of the hair, and therefore the term is misapplied, and is consequently absurd. Perhaps we may be told that *tinea* is a disease of the head, and ekzema being in this case a disease of the head, it is therefore immaterial what term be employed, provided that we understand its meaning. Some such argument

has been used in the instance of psoriasis and lepra. But it is clear that such arguments, and so loose a manner of thinking, are wholly unsuited to the present age, and inadmissible by an educated and polished profession, and therefore are utterly unworthy of being entertained.

When the discharges or the crusts, as the case may be, are cleared away from the scalp in a case of ekzema ichorosum, or ekzema ichorosum which, by neglect, has degenerated into an ekzema crustaceum, the skin will be found red and inflamed, more or less tumid, more or less denuded of epidermis, and moist with exuding secretion. To an aggravated form of this state of dermatitis Willan applies the term ekzema rubrum; and it would be matter of surprise to all who have the opportunity of observing this disease, that the roots of the hair should remain so entirely unaffected, were it not at the same time known that the pathological operations of ekzema are extremely superficial, and for the most part confined to the vascular layer of the derma.

Ekzema squamosum is the most common form of ekzema of the scalp; sometimes it is the sequel of the ichorous form of the affection, and sometimes of the erythematous; and it ordinarily presents two degrees of severity; in one of these the desquamation consists of very fine, thin, and minute scales, constituting *pityriasis*, while the other presents the typical character of *psoriasis*. For example, the integument is red and thickened by infiltration, and the scales are thicker and larger, and in every way coarser. In both these forms there is redness, slighter in the one, more considerable in the other; in both there is pruritus, but most in the latter; and in the latter also, accompanied with a variable quantity of ichorous exudation, when the skin has been severely scratched. Looking to the relative amount of hyperæmia in these two forms of affection, as also to the interstitial infiltration of the one

and the absence of infiltration in the other, we see an explanation of the finer scales of pityriasis and the coarser scales of psoriasis; and we at the same time recognize the identity of the affection, and perceive that pityriasis and psoriasis are simply degrees of squamous dermatitis; in fact, of ekzema squamosum of the scalp. And it is to this form of affection that Willan, following the example of his predecessors, assigns the term *porrigo*—*porrigo*, a term used by Celsus, being derived from the Latin word *porrum*, an onion, because “ut porrum in tunicæ involucra, ita cutis, velut in squamas resolvitur.” You see, gentlemen, that the study of ekzema leads to considerable disappointment for the lovers of mystery, and that, as searchers after truth, it affords us another argument for taking it as the head of our discourse, and as the foundation of a practical classification. Already, on the scalp alone, ekzema has routed the artificial classification almost to destruction, inasmuch as it has represented five out of a total of eight of the orders founded on the pathological signs of cutaneous disease, namely, papulæ, squamæ, exanthemata, pustulæ, and vesiculæ. We may add further that pityriasic ekzema capitis is more chronic than the psoriatic variety, and more frequently leads to destruction of the hair. The loss of hair in this instance arises from exhaustion of the trichogenic function, and the prolonged duration of the disease is attributable, not so much to its chronic nature, as to the little inconvenience it occasions the patient, and his consequent neglect of application for relief.

EKZEMA FACIEI.—Ekzema of the *face* offers the greatest amount of interest in infants, in whom all the forms of this affection may be observed, sometimes in the erythematous and papulous form constituting strophulus and tooth-rash; sometimes in the ichorous form, producing by the desiccation of its secretions the milk-crust, *crusta lactea*, the ekzema

larvale or porrigo larvalis ; and sometimes in the squamous form. The commonest seat of the affection is the cheeks and the forehead, and in the ichorous form, which is attended often with intense redness and very considerable swelling, a picture is produced which is really alarming and frightful to behold ; the head may be swollen to the roundness of a sphere, the features are flattened and distorted, the eyes are closed by œdematous infiltration of the lids, and in some instances the lids are everted, and the balls of the eyes brought hideously into view. What a terrible picture ! But how easily relieved ; nay, how easily cured. In general we use the word "cure" with great circumspection, with extreme humility, but in this instance we pronounce it emphatically.

Taken in their order of succession, the first of the infantile ekzemata is the milk-crust : it would have been more correct to have termed it the *no-milk crust*, for its cause is invariably a deficient or unwholesome supply of the natural food of the infant. Then vaccination, and then dentition, come in for their share in the causation of the disease ; first, primary dentition ; secondly, permanent dentition ; then food supply ; and then puberty, with its physiological changes. Even the powers of the constitution may be tested by ekzema, as to their capabilities of resistance ; the erythematous and the papulous forms accompany power and tone ; the ichorous form indicates an inferior standard of vitality ; and the purulent complication of the ichorous form, the lowest extreme of debility. Ekzema, in general, gives little or no alarm to the deeper structures of the body, but ekzema of the head is frequently attended with enlargement of the occipital and post-auricular lymphatic glands ; and the purulent forms of the disease with sub-cutaneous abscesses besides.

In the youth of both sexes, when the powers of

the constitution are exhausted, we meet occasionally with ekzema pustulosum or impetigo; and it is at this age also that ekzema labiorum, a sequel of ekzema infantile, is most troublesome. In the adult, ekzema squamosum is apt to prevail, and may lay siege to any of the prominences of the face; and in the adult female, and, a little latter in the male, we find ekzema ichorosum attacking the ears, with its usual accompaniment of cedematous infiltration. While, later still, squamous ekzema of the eyelids is apt to take place, and squamous and ichorous ekzema of the fissures of the ears.

EKZEMA SULCORUM.—Ekzema has a marked tendency to seize upon the most delicate and sensitive parts of the skin, and especially those which are exposed to heat and perspiration and are withdrawn from the free current of the atmosphere. You may perhaps object to this remark, that ekzema is very common on the face and on the hands; but in those localities there exist special sources of irritability having reference to innervation and circulation, which are absent elsewhere. And, as a rule, ekzema will be found to be more frequent on the clothed than on the unclothed parts of the body, and in the *creases or grooves of folds* of the skin or in the hollows of joints than anywhere else. If we apply this observation to the ground over which we have just been treading, we shall perceive a reason for the frequency of ekzema at the commissures of the eyelids and mouth, at the base of the *alæ nasi*, around the aperture of the nares and especially in the groove at the root of the ears. In infants and fat persons ekzema is often met with in the creases of the neck as well as in those of the trunk, and in adults of all ages we find the affection in the hollow of the sternum, in the grooves beneath the *mammæ*, in the hollow of the umbilicus, in the duplicatures of the integument of the abdomen, and in the fossa of the nates.

EKZEMA ARTICULORUM.—From the frequency, we might almost say the constancy, of ekzema in the flexures of the joints, *ekzema articulorum* has become one of the standard terms of dermo-pathology; and it is also one of the signs by which constitutional or diathetic ekzema is manifested. Most frequent of all it is met with in the hollow of the popliteal space; next in the bend of the elbows; then in the armpits; and then in the groins.

Friction between opposed surfaces of the skin, when it goes no further than to produce redness, is termed erythema intertrigo; but the same amount of friction that would produce erythema in one person, would, in another, be the cause of an exudation, in fact, an ekzema; even in the first of these supposed cases, an increase in the quantity of the friction would convert the erythema intertrigo into an ekzema erythematosum, and probably an ekzema ichorosum. In persons in whom an ekzematous diathesis prevails, the slightest degree of friction would be sufficient to occasion an ekzema; and the skin of folds or hollow places or surfaces in contact with each other betrays a natural proneness to the development of the exudative form of erythema, or simply ekzema, often under the most trivial degree of irritation. In the hollows of folds of the skin the exudation sometimes occurs without any apparent breach of surface of the epidermis, and the secretion may very closely resemble mucus in its character, being viscous and slightly opaque: this is ekzema mucosum. At other times there may be fissures of various extent, from which exudes an ichorous lymph; or, in more aggravated cases, there may be present decided excoriation, with an abundant exudation, and a tendency to form crusts by the desiccation of the secretion. This latter is the common character of ekzema articulorum. While, at a later period, the inflamed part may assume the properties of ekzema squa-

mosum; the skin may be thickened and infiltrated, it may split into cracks and fissures on the mere motion of the joint; it may exude an ichorous discharge from the rhagades, and the discharge may be commingled with an effusion of blood in a greater or less degree.

One joint only, namely the axilla, deserves to be singled out from the rest to distinguish some peculiar features; and these features are, the occasional enlargement of lymphatic glands, and more frequently still the formation of hard masses seemingly of condensed and thickened areolar tissue immediately beneath the skin, and the suppuration of these masses; sometimes giving rise to superficial abscesses; sometimes opening singly, but more frequently at several points, and not rarely establishing fistulous channels, which continue to pour out pus for a considerable time; or which, after its escape, heal up, and break again and again, and in this manner are continued for several weeks, and in some instances for months.

EKZEMA PUDENDI ET PERINEI.—The *pudendum* and *perineum* are one of the favoured seats of ekzema both in the female and in the male; there, especially, the common exciting causes of ekzema are present in an excessive degree, for example, heat, perspiration, moisture of excretions, contact of surfaces, friction, absence of ventilation, and hæmorrhoidal veins; and the symptoms are aggravated by the motions of the body, of which the perineum is the necessary centre. In a fully developed example of ekzema pudendi, the inflammation occupies the whole of the external genital organs spreading upwards upon the mons pubis in front, extending backward along the groove of the perineum to that of the nates, outwards in the glutæo-femoral groove posteriorly, and along the inguinal grooves anteriorly, and for some short distance down the thighs at either side. But the extent of the disease pre-

sents usually the utmost variety; it may be limited to the scrotum and root of the penis; to one side of the scrotum and the contiguous surface of the thigh; to the scroto-crural grooves; to the perineum; or to the immediate circumference of the anus; while in the female the labia alone, or the labio-crural grooves, may be the seat of the affection.

In like manner, the disease may present itself with the threatening characters of an ekzema erythematosum; with the fiery redness, the tumefaction, and the abundant exudation of an ekzema ichorosum; with the prurient irritation of an ekzema squamosum; or it may alternate throughout the entire series of forms, one while exhibiting the calmness of the erythematous type, another while the fierceness of the oedematous and exudative type; and in the third place the inveteracy of the squamous type. It was an intercrural ekzema in its most active form that suggested to Willan his picture of ekzema rubrum. And it is in the pudendal region, and especially along the boundary-line of its inflamed surface, that is developed the papular ridge which is characteristic of ekzema marginatum. It must be mentioned also that the suffering attendant upon ekzema pudendi is very much enhanced by the formation of rhagades of considerable extent; by the burning and throbbing of the ichorous form, and by the intense itching of the dry or squamous form. Ekzema of the anus is remarkable for its itching; so also is ekzema of the anterior commissure of the vulva; while another annoying form of the disease, attended often with incessant pruritus, is ekzema squamosum præputiale. In this latter affection the prepuce is thickened, hardened, more or less deeply fissured, and contracted so as to occasion paraphymosis.

EKZEMA MAMMÆ.—The *mamma* in the female is the occasional seat of ekzema, and especially the

mammilla; the chapped and fissured nipples which are met with so frequently, are an example of ekzema. And ekzema of the mammæ may present all the chief characteristic forms of the complaint; it may be erythematous or vesiculous, ichorous or squamous; but is usually very amenable to treatment. Even the chapped nipple, frequently so chronic, is by no means difficult of cure, when nursing can be abstained from, and the macerating influence of the saliva of the infant avoided.

EKZEMA MANUUM ET PEDUM.—The *hands* and the *feet* are, both of them, extremities of the body, and therefore their liability to altered nutrition dependent on exhaustion of nerve-force ought to be nearly similar; but the one is a clothed and the other an unclothed organ, and this constitutes an essential difference in their behaviour under disease, and gives rise to a series of varied manifestations. The feet, although in their tissues they may be debilitated by constant covering, are less exposed to the influence of irritants, such as extremes of cold and heat and the irritants of the chemical and mechanical class, than the hands; hence, ekzema of the hands is more common than ekzema of the feet. Ekzema of the back of the wrists from cold, and especially from the combination of moisture with cold, as in the instance of chapped hands, is one of the most frequent phenomena of domestic life; others are the so-called ekzema solare from the action of the rays of the sun upon the back of the hands; ekzema from the use of alkaline solutions; of acid solutions, as in the manufacture of sulphate of quinine; from the contact of sugar, as in the case of grocers' itch; of lime, as in the instance of the bricklayers' itch; of flour, as in the bakers' itch; and of friction and maceration of hot soap-suds, as in the washerwoman's itch. From all these causes the feet are protected, and are, therefore, less liable to ekzema. But there is a cause of ekzema in

the feet which is absent in the hands, namely, the heat, moisture, and attrition which occur between the toes, and give rise to one of the most troublesome forms of ekzema ichorosum.

The hands and the feet, and especially the first, are subject to all the forms of ekzema; the erythematous, the papulous, the vesiculous, the ichorous, the pustulous, and the squamous. In their order of frequency we should place the squamous first on the list; secondly, the papulous; thirdly, the vesiculous; and fourthly, the ichorous and suppurative. A common cause of ekzema of the hands, namely, the *acarus scabiei*, affords an apt illustration of the greater number of these forms. In the first place there is more or less of an erythematous condition of the skin; secondly, there are papulæ; thirdly, vesicles; sometimes pustules; and, frequently, patches of excoriation corresponding with ekzema ichorosum; in certain cases, where the skin is less sensitive and its indisposition to exudation more decided, there might also occur ekzema squamosum.

Ekzema of the hands sometimes puts on the characters of an acute affection; the hands and fingers are swollen, they are more or less red; the cuticle is raised into minute vesicles, in some places the cuticle is lifted up in an extensive layer; there are breaks here and there, through which an ichorous exudation takes place; in parts, the cuticle has become softened and is rubbed off; the exposed derma is intensely red; it exudes abundantly, sometimes a limpid and sometimes a purulent fluid; and occasionally the vesicles on the surface may be filled with pus in lieu of transparent lymph. This is a picture that you will see frequently in children, in young females and youths; sometimes in the adult female, exhausted by parturition and long nursing: but never under any other than the like conditions; namely, the tissue irritability of

childhood or that induced in the adult by exhaustion and debility. It is the *ekzema rubrum* of Willan, occurring in the hands; and it is the *ekzema impetiginodes* of the same author.

One of the commonest forms of *ekzema manuum* is the *ekzema papulosum* of the back of the hands; the eruption is developed in one or more patches, and is more or less completely circumscribed. It consists of a cluster of papulæ, dispersed or coherent, united by an inflamed and thickened base; and is sometimes simply papulous and quiescent, sometimes moistened by a copious ichorous exudation; and sometimes encrusted over with a greyish and yellowish scab. This form of *ekzema* is remarkable for its itching propensities; at first there may be nothing more than an itching of the skin; the skin is rubbed or scratched, and then small hard knots or pimples appear; the pimples enlarge, the itching is increased, the scratching renewed, and the pimples become inflamed; the inflammation spreads from their basis to adjoining pimples, and a number become united into a single patch by the intervention of an inflamed and infiltrated base. It is after infiltration has occurred that the ichorous exudation begins; but not spontaneously, only after irritation by excessive itching; the patient has bestowed upon the patch a thorough rubbing, or torn its surface by an angry scratching. This is the *leichen agrius* of Willan; it is verily *αγριον*, angry, fierce, violent; according to a certain form of nomenclature, it is an *ekzema leichenosum* or *leichenodes*; but in simple truth it is nothing more than an *ekzema papulosum*.

But there is a silent form of *ekzema* which takes possession of the skin of the hands and is much more common than the preceding forms. It begins with a subdued itching; say on the sides or the tips of the fingers, along the ulnar border of the hand, on the ball of the thumb, or in the palm.

The first visible notice of anything wrong is a dryness and yellowish transparency of the cuticle; the altered cuticle cracks and desquamates, sometimes by way of exfoliation, sometimes in small thin scales; the derma beneath the scales is somewhat red and indurated; it cracks into dry fissures, and a chronic morbid action is set up, which rarely rises to the level of inflammation, but is very tormenting to the patient. It itches, it catches in everything he touches; moreover it is often very sore, very tender, and sometimes hot and burning. And occasionally, if it be much scratched, it may exude a little ichorous fluid, and occasionally it may bleed. You will sometimes meet with this form of ekzema on the tips of the fingers, where it may be accompanied with painful cracks. We have seen it several times in ladies who play upon the harp.

In the palm of the hand, this ekzema squamosum is known by the name of psoriasis palmaris, and in truth it is the legitimate psoriasis palmaris, the direct offspring of its chief of kin, psora; psora being, as we have already pointed out, the ekzema of modern nomenclature. There are several other affections of the palm of the hand, that we need not more particularly allude to at present, that are also, but falsely, called psoriasis; a fact which renders the correct diagnosis of an ekzema squamosum of more importance than would otherwise be the case.

Ekzema squamosum sometimes, also, takes possession of the walls of the nails, and besides being painful and troublesome, disturbs the healthful formation of the nail. This is especially the case when the posterior wall, that which contributes to the production of the surface of the nail, is affected. The posterior wall may or may not be swollen in this instance; it may or may not be fissured; but the surface of the nail is apt to be discoloured, rough, and marked by numerous hollows, as though it were wormeaten; and sometimes

the nail is thickened and horny both in colour and density. This form of disease is *ekzema unguium*, a troublesome and vexatious affection.

Ekzema squamosum of the hands may be met with at every period of life, but is most common in persons of advanced life; in such as have a dry skin, and an exhaustive and nervous temperament.

CONSTITUTIONAL RELATIONS OF EKZEMA.—Let us now turn to another page in the history of *ekzema*, and inquire into its relations with the constitution of the individual. *Ekzema* may be regarded in the double light of a disturbed function of the economy and a disturbed function of the part. It has therefore no constitutional symptoms of its own, and any symptoms that may be present in association with it must be attributed to the general disorder of the economy upon which the *ekzema* depends. Very frequently *ekzema* is substitutive of some other form of disease, and the symptoms of that disease cease as soon as the *ekzema* is developed, or it may be derivative of a morbid action taking place within the economy, and a similar result will follow. Popular observation of this kind has doubtless been the source of the prejudice, so common amongst the public, against a rapid cure of *ekzema*; and, corroborated by the humoralistic doctrine of a past day, has suggested the dread of transferring the disease from the skin to some inward part, in other words, of “driving in” the disease. Hence we sometimes hear the stale opinions of medical men, that an *ekzema* infantile should not be interfered with, and sometimes this miserable twaddle goes the length of assuring the mother of the infant that it would be easy to cure the local affection, but the constitution would be certain to suffer. A sounder theory than humoralism will impose a natural check to such puerile objections, and will secure a more wholesome philosophy.

But although ekzema has nothing specific in its nature and has no constitutional symptoms, it has all the capacity for becoming a serious irritant of the economy, and of increasing the disorder to which it owed its own proper origin. If disordered digestion, disordered nutrition, or disordered innervation be the causes of ekzema, these disorders may be increased by the irritation raging in the skin; an irritation which destroys comfort, destroys sleep, destroys appetite, destroys exercise, and necessarily lays the foundation of an infinity of secondary evils. It is well known that in infants, ekzema is not always limited to the skin; but sometimes extends to that inner skin the mucous membrane, which lines the air-passages; and in this way becomes the source of thickening of the membrane, of obstruction of the air-tubes, and possibly of dilatation of the air-cells; for bronchitis at an early period, and asthma in later age, are by no means unfrequent companions of ekzema.

Again, by ekzema of the skin, a state of chronic irritation and exhaustion of function is sometimes established in that membrane, as a life-long consequence. The adult, who has suffered from ekzema infantile, is not unfrequently, for ever after, the victim of a dry, harsh, wrinkled, unsecreting, or unperspiring integument; sometimes we have succeeded in tracing xeroderma to this source, xeroderma, the parent of true ichthyosis. And, very constantly, the possession of an ekzematous diathesis is indicated by a shrivelled, dystrophic condition of the skin, maybe of the face; maybe of the fingers and hands; a state which the texture and appearance of the skin of the rest of the surface of the body tend to corroborate as appertaining to ekzema.

DIAGNOSIS.—And now let us say a few words with regard to the *diagnosis* of ekzema. Ekzema is a superficial and chronic inflammation of the skin,

attended with a ragged and desquamating state of the epidermis, and with the exudation, or a tendency to exudation, of an ichorous fluid; the ichorous fluid being sometimes retained in minute vesicular elevations of the epidermis, sometimes free, and sometimes infiltrated in the tissues of the skin. When all these signs are present together, and especially the exudation and the broken epidermis, ekzema stands self-confessed; but we have also, very frequently, to see that an erythematous eruption will, at a future period, become exudative, or that a state of desquamation has, at an earlier period, passed through an exudative stage. In a word, any doubt as to diagnosis can only arise in the instance of the erythematous and papulous forms of the affection, and sometimes, but more rarely, in the squamous form.

Wherever a doubt does exist, we must fall back on the other known phenomena of ekzema. Thus, if there be suspicion of an ekzematos diathesis; if the patient have any present indication of ekzema in the known haunts of that affection, as in the joints, behind the ears, in the head; if he have previously suffered from ekzema in any shape; these may be taken as corroborative proofs in aid of your diagnosis. Again, another source of verification is presented in the negative phenomena of the disease. Ekzema, it will be remembered, is slow in its progress. It is more superficial than erysipelas, but deeper than erythema. It is unattended with swelling in the beginning, and is rarely marked by much swelling throughout its course. It is pruritic from the first, and the pruritus increases with its advance. It is rarely developed with the uniformity of an exanthem. It is apt to be patchy in one place, and papulous in another, and each day contributes to relieve us from our doubt. Moreover, it is important to remember, that, unlike the exanthemata, ekzema

has no premonitory symptoms, and no concurrent febrile manifestations.

On the other hand, gentlemen, ekzema has sufficiently close resemblances with other affections to make it necessary that you should use your best judgment in your inquiry. An erythematous or a papulous ekzema may resemble a variola, a scarlatina, a rubeola, a roseola, an urticaria, an erysipelas, an erythema, a dermatosyphilis, or a lepra; but if you are well grounded in the natural history of the disease, your doubts will soon vanish and you will learn to decide without hesitation. There is a moment when a herpes closely resembles an ekzema, but in the fully-developed form of either it would be difficult to make a mistake between them. The same may be said of pemphigous affections in their broken state, when they expose to view an inflamed derma, exuding a copious ichorous discharge; and a like remark applies to the circumscribed, squamous, and hypertrophous blotches of ekzema, in relation to the well-known disks of lepra.

ETIOLOGY OF EKZEMA.—There are few things in philosophy more remarkable than the change which has taken place in the medical mind, within the last few years, as to the signification of the word *disease*. At one time it was believed that disease was something foreign to the organization; at the present time it is recognized that disease is nothing more than discordant and untimely action; it is the jarring string of the harpsichord; it is, to travesty a popular phrase for which we are indebted to Layard, the right thing in the wrong place. Very generally, perhaps always, for we do not at this moment remember an instance to the contrary, it is a reparative process; but, alas! too frequently the reparation is a *darn* by which the whole fabric is ultimately ruined. And we cannot place before you a more dire picture of

impending destruction than that of the substitution of one tissue for another; let us say, nerve substance for muscle; vascular tissue for bone; bone for vascular structure; fat for heart-substance; connective tissue, or any member of the cell family, for more highly organized structures; or one or more of these tissues for skin. Herein lies, in many instances, a terrible realization of the nature of disease.

Such conditions as those now referred to bring under our consideration the ruling and co-ordinating and maintaining power of that sublime essence, LIFE. We may not be scientific enough to put life into a bottle and weigh it or measure it, for such, we are told, are the aims of science; but it demands of us little philosophy to recognize its existence, and to note and to observe its laws. Of life in excess we can form no conception; but life in its multiple degrees of declension, from health downwards to disease and dissolution, is the daily object of our observation and study. We have said that disease is "discordant and untimely action"; that it is the "right thing in the wrong place"; we may take a step further and say that the regulator of discord, of untimely action, of misplaced action, is *life*. Our business, then, as medical men, is with life, is to sustain life; and to this one end to direct all our inquiry and all our energies. If we were asked:—What is disease of the skin? we should answer—It is a lowered vitality of the tissue of the skin, manifesting itself by abnormal action. If, upon these premises, we further inquire, What is the cause of disease of the skin; and *a fortiori* of ekzema? the answer would be—Debility, constitutional and local; debility of the system and debility of the skin.

Having now entered upon the question of the etiology, or the cause, of ekzema, we may repeat that the skin falls into a condition of disease because it is weak; and that the *cause* of skin disease, or,

if you will, the *cause of ekzema, is debility*. And as the consideration of "cause" involves a series of consequences, we may further state, that the skin is weak either from *hereditary* quality or from *accidental* circumstance; the accidental causes being *constitutional* or such as create debility of the skin through the agency of the system; and *local* or such as produce debility by direct operation on the part. Let us look at these causes when displayed in a tabular form; we then have:—

Skin debility	{	Hereditary	{	Constitutional
		Accidental		Local.

Hereditary ekzema is by no means a rare manifestation of the disease. We meet with it in infants, one or other of whose parents is ekzematous; we meet with it under similar circumstances in the adult; or it comes before us as a sequela in the form of xeroderma or ichthyodes. And we may be permitted to inquire:—What it is that is conveyed by hereditary transmission from the parent to the offspring? To this question the simplest of all answers is evidently the most correct, namely, *tissue resemblance*. Just as the features of the child have their type in the parent, so also have its tissues; a type which is constituted, not of figure alone, but also of function. We have just travestied the language of a distinguished politician, and we venture now to travesty, but with a sense of deeper veneration, a holier writing:—"And the *morbid conditions* of the parent shall be visited on the children"; for this law is indeed as true in its bearing upon physical conformation as it is in relation to the moral attributes of the individual.

But what shall we say to a doctrine that would convey, as an answer to our question, the idea of the transmission of a virus? Why, simply that it

has no foundation, is false and obsolete, and only fit to be trodden under foot. And yet this idea has prevailed aforetime, although it is now, as we believe and sincerely trust, utterly extinct.

The *accidental causes* of ekzema are twofold; they are either a part of the constitution of the individual for the time being, namely,—*constitutional*; or, they are external and foreign to the general organism, and operate only on the affected part, or, in other words, are *local*. It will easily suggest itself to your minds that there may often be a blending of the two sets of causes in an individual case; and this is actually the fact. Under these circumstances we should select the more prominent of the phenomena to represent the dominant cause, while therapeutically we should address ourselves to both kinds of causes.

Now, if we assume debility to be a cause predisposing the skin to the operation of morbid function, we may further inquire,—What it is that predisposes the skin to debility? In other words,—What are the *remote predisposing causes* of cutaneous disease? We have already settled that question in relation to heredity; and we have now to address ourselves to the remote predisposing causes belonging to the accidental constitutional group; and these we may state to be four in number, namely:—

Diathesis	Assimilative
Nutritive	Neurotic.

DIATHESIS, or tendency, is manifested by the aptitude of the skin to take on a morbid action upon the accidental presence of any cause disturbing the general functions of health. In the possessor of an ekzematous diathesis, the conditions which would occasion a dyspepsia, a bronchitis, or a rheumatism in persons prone to these separate tenden-

cies or diatheses, would in him occasion an ekzema. The diathesis in this case has not been inherited ; it is acquired ; but in time it becomes so far identified with the constitution as to be susceptible of transmission by generation, and in that manner to be in reality the source of inherited ekzema. Constantly we meet with examples of accidental ekzema, as in the instance of congenital ekzema wherein no predisposition to the disease exists in the parents. But, unless the disease be thoroughly cured, it may be, and will be, so far identified with the tissues of the child as to admit of being transmitted to the offspring of that child by way of inheritance. And in a case of this kind we should have strongly impressed upon our mind the necessity of promoting a complete and permanent cure, to prevent such a mischievous result. We shall ask you, gentlemen, to extend this principle to other diseases besides ekzema—*ex uno disce omnes*, and by this means you will become better and more useful physicians ; healers in the proper sense of the word, rather than “darners” : we have already, in a previous part of this lecture, told you of the danger of “darns.”

By NUTRITIVE remote predisposing causes, we mean a failure of the proper nourishment of the body, and, you will agree with us, doubtless, in the belief that few causes would be more potent in the production of debility of the constitution and through the constitution, of debility of the skin. We are not at present prepared with our figures, and therefore we must ask you to accept the very objectionable adjective “many,” when we say that very many cases of ekzema arise from this cause, particularly in infants, children, and young persons generally. Let us offer you one example out of a multitude. A nursing mother falls short of her supply of milk ; her infant has to be brought up by hand, a difficult and hazardous process ; the

artificial food is uncongenial to the sensitive organism that it is required to nourish; nourishment fails; starvation impends. You will admit that this is not an exaggerated picture; but what happens? The infant is reduced to a state of debility, nutritive debility; an exciting cause steps in as an irritant of the skin, and then those immediate or proximate changes take place which constitute ekzema. Do we not well, therefore, in establishing a group of causes which take their origin in deficient nutrition? a group of nutritive causes.*

ASSIMILATIVE remote predisposing causes give us a third group, taking their origin in derangements of digestion and its allied functions, including assimilation. We prefer to take this wider view of the nature of these causes, than to speak, as we might otherwise have done, of dyspeptic ekzema; arthritic ekzema; rheumatismal ekzema, and so forth. In a word, just as we have traced up a certain group of causes of ekzema to deficiency of the nutrient element of the body; so we can trace up another series of causes to the governing principle of the stomach and its dependencies. You will perceive that these views lead us onwards to the chief object of medical research, namely, the treatment of disease; for if certain diseases are found to arise from deficiency of nutrient material, then the supply of nutrient material is the aim of our treatment; and, in like manner, if the important functions of digestion and assimilation are the point of weakness, we address ourselves directly to them. By a different process of reasoning our French colleagues have arrived at similar results to ourselves; they have a family of *herpetides*, which are equivalent to a diathetic group; a family of *scrofulides* which correspond in some measure with our nutritive group; and a family of

* *Vide* CHAPTER IV.

arthritides which would seem to be the representatives of our assimilative group. And just as we teach the necessity of directing our constitutional treatment towards the improvement of nutrition and the strengthening of the assimilative system ; they enforce the adoption of a special treatment for herpetism, scrofulism, and arthritism. Put the true searchers after truth within the limits of a ring fence, and they will all, sooner or later, arrive at the same altar, although some may reach it upon their bellies, some upon their heads, and some few upright, in the image of their Creator.

There is yet a fourth group of remote predisposing causes, to which we have given the name of NEUROTIC. They are not diathetic, neither are they dependent upon the mere absence of nutrition ; nor can the digestive and assimilative functions be especially blamed ; but their essence is irritability ; irritability taking its origin in nervous debility ; and on that account we call them nervous or neurotic. For the subjects of nutritive causes we should look to infants, to children, to the growing age of youth, and to the parturient period ; for the subjects of assimilative causes, we seek in the mid-period of life, when the material of nutrition is useless otherwise than as a stimulant ; when, in consequence, it is present in excess ; and when, as a further consequence, it undergoes chemical transformations that become excitants of disease. While, the neurotic group is supplied by those who have passed the meridian ; in whom waste has taken the place of appropriation ; or those at earlier periods of life, in whom the nervous system has acquired an ascendancy over the organism and tends to waste its kingdom by excessive, by ill-regulated, and by morbid activity.

Gentlemen, need we say more with regard to the remote predisposing causes ; the tenant for life, represented by the hereditary and the diathetic ; the

nutritive as represented by the period of growth; the assimilative as represented by the stationary period; the neurotic as represented by the wasting period of existence. All that needs further to be said, is a repetition of what we have already mentioned in reference to the constitutional and local causes; the remote predisposing causes are occasionally combined; sometimes the combination may be the nutritive with the hereditary; the nutritive with the diathetic; the diathetic with the assimilative; or the diathetic with the neurotic. The relative importance of these combinations you will easily appreciate.

To descend from the general to the particular, with a view to illustrate the kind of causes which may predispose to ekzematous disease; we group under the head of *nutritive causes*:—errors of diet; weakly parentage; excessive growth; and errors of hygienic principles. Under the head of *assimilative causes*, we place:—deranged digestion; vicissitudes of cold, heat, and moisture; mental disquietude; and constitutional or organic disease. And as *neurotic causes*, we assemble together:—anxiety and affliction; excessive mental and physical labour; ungenial climate; uterine, reproductive, and puerperal derangements; and nervous shock or fright. And, although it be true, that all these causes tend to the production of one and the same disease; nevertheless, that disease is not an independent entity, and does not admit of being treated by itself, but only through the causes which have given it birth.

It may be interesting as an exercise, and will add to our knowledge of this important disease, to run over the various predisposing causes which may be alleged capable of giving rise to ekzema, and we place before you a list of causes which we have ourselves oftentimes verified; arranged in physiological order; they are:—

PREDISPOSING CAUSES OF EKZEMA.

Weakly parentage	Deranged menstruation
Errors of diet	Mental disquietude, anxiety, affliction
Errors of hygienic principles, namely, air, exercise, cleanliness, clothing, &c.	Sexual excesses
Vicissitudes of cold, heat, and moisture	Uterine, reproductive, and puerperal derangements
Transition of seasons	Deranged digestion
Ungenieal climate	Exhaustion from disease
Vaccination	Hæmorrhage
Dentition	Cachexia
Excessive growth	Gout and rheumatism
Excessive labour, mental and physical	Nervous shock and fright
	Local injury.

In determining the cause of a given disease, we need hardly remind you that we have to consider the agencies which conduce indirectly, directly, and immediately to the result which it is sought to explain ; or, in technical language, the predisposing, the exciting, and the proximate cause. Thus, if we take, by way of illustration, an instance of ekzema infantile, an error of diet may be the predisposing cause, friction of the skin an exciting cause, and hyperæmia, with exudation or desquamation, that is, ekzema, the proximate cause. It is often very convenient and very instructive so to be able to dissect the causes of disease, while, on the other hand, we rarely have the leisure to effect this analysis in practice ; it is, in fact, the grammar of medicine ; and although in time, and with the aid of experience, we learn to talk and to practise without the presence of our grammar, it is well to be grounded in grammar, and to be able to fall back occasionally upon our grammar in moments of thought and reflection, or under circumstances of difficulty. It may, however, be as well to remind you that the predisposing causes are in many instances only relative in their operation : thus an error of diet, besides being predisponent, may also

be excitant; and the same may be said of hygienic principles, vicissitudes of temperature, and most of the others. Again, to return to our first example, ekzema infantile,—error of diet may be the predisposing cause, and cold or heat the exciting cause; and furthermore, with hereditary diathesis, acquired diathesis from weakly parentage, or errors of diet or hygienic principles as a predisposing cause, vaccination or dentition may become the exciting cause. In fact, in this as in most of the examples of medical philosophy, science is the servant of knowledge; science feeds the furnace and greases the engine, but knowledge is the acting mind, and directs the course and navigation of the ship.

We will now, gentlemen, direct your attention to another group of causes, in this instance *exciting causes*, or such as directly excite the disease we are now studying. The causes we have heretofore considered prepare the way for the present group; they predispose, these excite; but you will be able to form a better judgment of them by seeing them displayed in a tabular form, thus:—

EXCITING CAUSES OF EKZEMA.

Local Group.

Cold	Chemical irritants
Heat	Mechanical irritants
Moisture	Varicose veins
Friction	Traumatic injury.

Constitutional Group.

Unwholesome food, Certain medicines.

You will see that the exciting causes of ekzema belong chiefly to the class of local irritants and are especially concerned in the production of the local forms of the disease, and the remarks which we have made heretofore on the relative character of causes are particularly applicable to the present

group. For example, cold and heat and moisture are frequent predisposing causes, and they are also, under other circumstances, common exciting causes. Need we remind you of the chapped wrists and hands of cold weather, *ekzema erythematosum et fissum*; of *ekzematous* eruption engendered by the direct agency of heat, as in *ekzema solare*; or of that very common cause of *ekzema* resulting from the combined influence of heat and moisture, as in the case of *ekzema axillare* and *ekzema perinæi*? Then we have *ekzema* resulting from clothing and bedding of too heating a quality, and especially when heat and perspiration are united; *ekzema* from the flow of the tears, of saliva, of discharges upon the skin, and *ekzema mamillarum*. And then there is a yet more striking and homely example of the irritant consequences of combined moisture and heat in the instance of the common poultice; a large number of *ekzematous* legs owe their origin solely to the apparently harmless, but in reality dangerous, poultice.

Besides these we have an active exciting cause of *ekzema* in friction, and especially in that more severe form of friction to which itching incites, namely, scratching. Hebra has the credit of making the remark that the eruption of scabies, which is an *ekzema*, is due, less to the direct irritation of the *acarus* than to the scratching to which its titillation necessarily leads. We need not accept this statement as a fact, but it is convenient as an illustration. Then follows the extensive family of the irritants—the mechanical irritants, such as sugar, flour, brick-dust, and lime, in the instance of the grocer's itch, the baker's itch, and the brick-layer's itch; and the chemical irritants, for example, —alkalies, acids, tincture of *arnica*, *cantharides*, and croton oil.

Varicose disease of the veins of the lower extremity is a common cause of local *ekzema*; disten-

sion of the minute venules of the skin occasions itching; the nails are brought into requisition to relieve the pruritus, papulæ result from the increase of irritation caused by the scratching, and a papular ekzema is forthwith established. It may be questioned, as in the case of scabies, whether the varicose veins, as well as the acarus, may not also be regarded as a predisposing cause and the scratching the real exciting cause. Again, a scratch, an abrasion, or a leech-bite; the puncture of the ears for earrings, or the slight operation for vaccination, have also been known to be the starting-point of an ekzema, and in this sense a traumatic cause.

Constitutional exciting causes are evidenced by disturbance of the stomach occasioned by unwholesome food, and also by certain medicines, such as opium, mercury, and copaiba. The hydrargyria of Alley, or erythema mercuriale, was an ekzema; and the eruption caused by copaiba in certain constitutions is well known, and is apt to degenerate into ekzema.

The doctrine that we have advanced in respect of the nature of ekzema, namely, that a *causa morbi* in the system, failing the condition of an exciting cause in any other of the organs of the body, may, in the presence of such exciting cause in the skin, be manifested by that membrane, will prepare you for the observation that ekzema is very frequently *substitutive* of some other disorder of the economy. Sometimes ekzema follows or takes the place of a bronchitis; sometimes of a derangement of the digestive functions, commonly denominated a bilious attack; sometimes of a fit of gout or rheumatism; sometimes of hæmorrhoids, and so forth.* In practice you will see this association so frequently, that it will teach you, perhaps more than anything else, the principle of treatment of this disease, and it will

* *Vide* CHAPTER IV.

act as a warning against trusting too exclusively to local treatment. Often it will occur to you that your patient is perfectly sound, like a good horse, wind and limb; but in what way is perfect health consistent with a troublesome ekzema? Why, in no other way that we can understand, barring the existence of locally morbid tissues, than through the absorption by the ekzema of the whole of the *causa morbi* previously smouldering in the economy.

The facts, however, as to the *substitutive* attributes of an ekzema are overwhelming; but we are not equally convinced of its *derivative* effects. The theory that regards ekzema infantile as an outlet or safety-valve that is not to be disturbed, necessarily treats of the eruptive affection as a derivation of something which it may be necessary to remove from the system, the idlest possible quality of medical moonshine; a kind of routine lunacy only too common amongst mankind. That there is a *causa morbi* there can be no question, and happy the individual in whom a *causa morbi* is absent at any time; the essence of that *causa morbi* is debility, and nothing can be more unphilosophical than to assume that an existing debility is not to be removed; or that its removal, by curing an existing disease, predisposes to another and a more serious disease. The mode of viewing ekzema, whatever its form, and whether occurring in the infant or in the adult, is exactly that in which we should regard every other complaint, whether it be a bronchitis, a pneumonia, a diarrhoea, or any kind of disease, namely, as a thing to be cured, if we are able, with all the speed that we can bring to bear upon the proceeding, and in the most direct and certain manner, and without respect to ulterior events. We are often told by the mother of an ekzematous infant:—My doctor says he can cure the disease, but then the disease will be driven in, and the child will have something worse. There are clearly two fallacies in this state-

ment, the first being that the doctor *can* "cure the disease," for of a certainty, if he could he would; and the other fallacy is that "a driving in" is possible, or that any other disease would result from the cure of the ekzema. We may repeat that ekzema is a debility; to cure the ekzema is to cure the debility, and consequently to make the weakly child strong and healthy.

Gentlemen,—we opened our inquiry into the nature and qualities of ekzema by impressing upon you the necessity of a thorough knowledge of this one disease, not only on account of its own individual importance, but also because it must be regarded as the type of cutaneous disease in general, and the standard with which all other diseases of the skin are to be compared. We have therefore pursued the subject of its etiology at considerable length, more lengthily possibly than may have consorted with your patience; nevertheless the subject is far from being exhausted, and will well repay a personal examination for yourselves. For the present we deem it expedient to dismiss it, and conclude with a summary more easy of being borne in remembrance than our previous lengthened detail. The cause of ekzema is debility, sometimes inherent or diathetic, sometimes hereditary, and sometimes accidental or acquired. Every condition which tends to produce debility is therefore a cause of ekzema. It may be that the cause is a direct excitant, or it may be a predisponent requiring the ulterior stimulus of an excitant. So that, in ekzema, as in most other diseases, two factors are necessary to the production of the affection; first, a condition of the body favourable to morbid action, and, secondly, an excitor capable of setting up morbid action. We will illustrate this point by one or two popular examples, in order to impress the matter more forcibly on your recollection. You know the encrusted ekzema of infants, termed *crusta lactea*, a state of the disease

which conveys in its name both its cause and the effect of that cause. Insufficient or bad milk is the occasion of debility; and, secondly, insufficient or bad milk deranges the stomach, and throws out an eruption on the skin. Again, we hear of ekzema from dentition, and of the very general impression amongst medical men that such an eruption is not to be treated. Let us see how the case stands in this instance: painful dentition causes want of rest, disturbance of the digestive organs, debility; painful dentition is therefore a predisposing cause; then an exciting cause, such as cold or heat and moisture, steps in, and ekzema is established. Now, gentlemen, can you conceive any objection to removing, *if you can*, the predisposing cause, or the exciting cause, even if you dread to cure the proximate cause, that is, the disease? We think not; neither do we think that you would lose your *aplomb* of self-respect, if, in honestly allaying the causes, you inadvertently cure the disease. Or, let us take another case of still more importance as far as being thoroughly understood is concerned, namely, ekzema from vaccination. Vaccinia, as you well know, is a modified small-pox; the vaccine fever always occasions more or less debility, consequently a state favourable to the invasion of ekzema; in other words, vaccination, with perfectly pure lymph, is a predisposing cause of ekzema; and another factor, namely, an exciting cause, completes the nosogenetic circle. Or, the case may stand thus: the child is hereditarily ekzematous, and then the mere puncture of vaccination becomes in itself the exciting cause. We know the care which vaccinators usually evince in the selection of subjects for vaccination, and to this fact is to be attributed the extreme rarity of ekzema after vaccination; but with all the care they can adopt, an accident of this kind will sometimes happen. A lady brought to us, a short time back, an ekzematous child, in whom vaccination had

brought out vaccinella, in other words, an eruption of umbilicated vesicles resembling those of small-pox ; and we have recorded, in our writings, similar examples. But more frequently, the reverse of this occurrence is experienced, and the ekzematous diathesis generally refuses to respond to the vaccine impregnation.

PROGNOSIS OF EKZEMA.—And now, gentlemen, we will leave the important question of cause and pass on to that of *prognostics*. You will be consulted by mothers whose children are in a deplorable state from ekzema, and who may have been some time suffering before they come under your notice, and they will put to you two questions :—Is there danger to life ? Is there danger of deformity ? And to both of these questions you may answer in the negative. Ekzema is a disease of the “*summa cutis*” of the most superficial stratum of the derma, a disease in which the secreting faculty is in excess ; a kind of catarrh of the external skin ; a disease in which disruption and separation of the epidermis, with profusion, accumulation, and desiccation of secretions, together with a moderate amount of œdematous swelling, are the essential characters ; there is neither deep inflammation nor destruction of tissue, and therefore all these appearances clear away like an exuviated cuticle, when a cure is effected, and leave no trace of their presence behind them. In one instance only, which lately fell under our notice, there was superficial sphacelus of the skin, with sloughing, extreme exhaustion, and a fatal termination of the case ; but these bad symptoms occurred only as the consequence of mismanagement. A second instance of death from ekzema in an infant is all that we can remember to have met with ; and there also mismanagement was the *causa vera* of the misfortune.

When it is remembered that not only the outer skin, but also the mucous membrane is very commonly affected in ekzema, and especially the mucous

membrane of the lungs, it is matter of surprise that a fatal termination of the disease is so very rare. We have seen this combination several times fatal in the adult, but in such cases bronchitis and pneumonia were the more frequent cause of death. Nevertheless, although we can speak hopefully of ekzema in regard to the ultimate result, there are several points in its history that mark it as an inveterate disease, and often a life-long torment. When it owes its existence to a diathesis, and is developed in infancy, it is wont to interfere very seriously with the nutritive functions of the skin. The skin is apt to become dry and hard and harsh, susceptible of irritation from trivial causes; the normal secretions of the skin are more or less suspended or arrested; the cuticle is unsound, and that state of the integument is engendered which we have termed xeroderma, a first stage of ichthyosis.

Like all diseases of the catarrhal class, ekzema is prone to be very chronic as to its duration; it drags its weary length slowly along; it is apt to become a habit; and from the presence of itching as a leading symptom, two of the most active of the causes of the disease, namely, friction and scratching, are perpetually in operation in keeping up the disease. Another of the phenomena of ekzema, a tendency to recurrence, is also to be borne in mind in drawing our prognostic of its issue. Ekzema is apt to recur annually, for example, in the winter or summer of the year; sometimes twice in the year, as in the spring and at the fall; and at other times at periods of several years. Again, its association with a mal-assimilative diathesis, such as gout or rheumatism, would very much influence our decision; or its connection with some chronic and permanent disease of the local class, such as varicose veins. But possibly ekzema is, under no circumstances, more inveterate, next to its diathetic origin, than when it is associated with a weak and irritable nervous system—

for example, in that group of the affection which we have distinguished as neurotic ekzemata.

In conclusion, looking to the many causes which contribute to render ekzema a more than usually chronic and inveterate affection, and taking into consideration the circumstance that it is necessarily a disease of tardy movement towards cure, prone to repeated and vexatious exacerbation and relapse, we may venture to deliver the general verdict—that ekzema is not dangerous to life, that it is always susceptible of mitigation, and generally admits of permanent cure.

TREATMENT OF EKZEMA.—We have directed your attention to a series of questions which have presented themselves to our notice in the course of our study of ekzema. We began with the inquiry:—What is ekzema? Then: How is it known? And further: How is it to be distinguished from other diseases? We next proceeded to the examination of its causes, and then to consider its consequences; these various questions comprising the *definition*, the *description*, the *diagnosis*, the *etiology*, and the *prognosis* of the disease. We have now to take the final step of considering: What are the means which conduce to its cure? In other words: What is the treatment to be adopted for its cure?

The first and almost the chief thing that attracts the attention in ekzema is the local affection; it is on account of this that the patient applies to you for relief, and often himself sees nothing else that requires treatment. Nevertheless, thanks to the popular prevalence of humoralistic views, he is ready to suspect and to acknowledge that there must be something wrong in an organization that is unable to extend its protection to the most distant limits of its territory and is incapable of resisting the irritative influence of ordinary stimulants applied to the skin, and he is prepared to accept in aid of the local

treatment, a treatment adapted to give energy and strength to the constitution ; in other words, a constitutional treatment.

Let us take as an illustration of these views an example that we have appealed to often before, namely ekzema infantile. An infant is covered with an eruption of ekzema ; the cause of that eruption is an error of diet ; we should be ill-performing our duty if we were to content ourselves with a local treatment to the skin, without making an endeavour to remove the cause by modification or improvement of the diet. It may happen that a mere change of diet—say, a wet-nurse, or Liebig's food, or cod-liver oil—may be sufficient for our purpose ; but it is also not improbable that deficient nourishment, pain, and want of rest, may have engendered a state of constitutional disorder, which will render necessary a recourse to tonic medicines such as phosphoric or hydrochloric acid, or iron, or arsenic. Or, if we take the most simple instance of local ekzema, and examine the constitution searchingly, we shall discover evidence of deficiency of nutritive power ; otherwise, nutritive debility. You may accept it as certain, and beyond the reach of question, that disease cannot fix itself upon a healthy organism ; and that the presence of local disease is a proof of a debility of organization, a debility that medical treatment may in most instances relieve, and in many also cure.

We think that you will agree with us that ekzema, like most other diseases attended with a local manifestation, calls for a constitutional as well as for a local treatment. In fact, ekzema differs from no other disease of the organization, excepting in this, that from its position at the surface of the body, it is inevitably exposed to the perpetual influence and irritation of the atmosphere.

The LOCAL TREATMENT OF EKZEMA may be summed up in a few comprehensive words :—*allay irritation, and*

restore the weakened tissues to the normal standard of health. The most complete mode of allaying irritation is to exclude the atmospherical air without interference with the transpiration of the skin. The method of restoration of the skin to its normal health is by the judicious use of stimulant remedies. Stimulants, you will remember, when administered internally are termed tonics, so that the external treatment which we propose for the corroboration of the tissues of the skin, is eminently *tonic*.

Daniel Turner, the first of English dermatopathologists,* left behind him a reputation for his *unguentum de lapide calaminare*, the famous Turner's cerate; and we hope to be able to leave behind us an equal reputation for the benzoated ointment of oxide of zinc; at last, and apparently with some reluctance, provided with a place in the British Pharmacopœia, upon whose pages it sheds unwonted lustre.† Now, the oxide of zinc ointment, properly benzoated, and made of pure materials, pure oxide of zinc and pure lard, is the most perfect local application for ekzema at present known; and, indeed, is so perfect, that we doubt the possibility of its ever being excelled. It is suitable for every form and every stage of the disease, but most of all for the dry forms; and it should be applied in a twofold manner, namely, in substance with the point of the finger, or a thin spatula, or the hand, so as to distribute it uniformly over the morbid surface; and, spread on some soft material such as lint, cambric, or fine flannel. Employed in this way, the oxide of zinc ointment has all the advantages and most of the uses of the poultice, without the objectionable qualities of the latter, the dirt, the fermentation, the saturating moisture, and the decomposition. And it fulfils the purpose which

* Turner flourished in the early part of the eighteenth century, about 1710.

† JOURNAL OF CUTANEOUS MEDICINE, vol. i. p. 401.

it was sought to accomplish, it excludes the atmosphere without preventing transpiration; it keeps the surface upon which it is applied soft and flexible, and it gives nature time to effect the reparative processes needed by the skin. Sometimes the dressing, if the diseased surface be of small extent, may be kept in its place by strips of adhesive plaster; sometimes, and when possible this is always desirable, it is maintained in its place by the moderate pressure of a bandage either of elastic cotton or of Domett's flannel. But there are situations in which a bandage could not conveniently be applied, such as the face and the general surface of the body; and others in which a dressing of any kind would be objectionable, as behind the ears, in the axillæ, and in the region of the pudendum; and in all these cases we must trust to the reapplication of the ointment as frequently as it may chance to be rubbed off.*

It may be laid down as an axiom of cutaneous medicine that ekzema, in its active stages, should never be washed; one of the first instructions which you give to the mother of an infant suffering under ekzema infantile is to avoid washing the eruption; discharges may be absorbed by a soft napkin, adjacent surfaces may be wiped with a similar material, dirty ointment or loosened crusts may be lightly brushed away; but for the nonce no water should be employed. Your aim should be to preserve the inflamed

* Dr. Silas Durkee, of Boston, United States, places first amongst his local remedies for the treatment of ekzema infantile a lotion of bicarbonate of soda, containing a drachm of the salt to 12 or 16 ounces of water; and applied by means of folds of linen. He speaks of this lotion as being sedative, and allaying pruritus and inflammation; and relies upon it especially for the removal of crusts. Other remedies to which he gives a preference are—the oxide of zinc ointment; an ointment of carbonate of lead with prepared chalk; a liniment of glycerine, oxide of zinc, and camphor; a solution of chloride of zinc, two and a half grains to the ounce; cream with liquor plumbi, ℥ xv. ad ʒ j.; a chloroform ointment, ʒ j. ad ʒ j.; and carron oil.

surface as tranquil as possible; to give Nature, of whom medicine is only the handmaiden—perhaps we may be permitted to say the maid-of-all-work, since it seems to be the fashion of the day to discountenance the special investigation of disease—to give Nature the opportunity of accomplishing her cure after her own fashion and without unmannerly restraint. We have said that the office of the zinc ointment is to sheath and protect the morbid surface; but it performs another and very important function, namely, that of creating an artificial layer, to take the place, for the time being, of the lost cuticle; and this concretion of the ointment should be studiously promoted by applying fresh and fresh ointment as often as that previously applied has become dried up or has been accidentally wiped away. A scab or thin crust—not such a crust as would detain secretions on the part and be a source of offence—is Nature's "court-plaster" that we must learn of good time to respect. Officious Physic and meddlesome Surgery are two very mischievous and dangerous allies.

Gentlemen, we say again and again, that the local treatment of ekzema, in its more active and therefore most troublesome stages, requires no other remedy than the benzoated oxide of zinc ointment, and that by the use of the oxide of zinc ointment alone the first of the indications for the treatment of ekzema will be accomplished, namely, that of *allaying irritation*. But you *must* be provided with a good article, and you *must* learn to know its use. We will now pass on to another consideration, also of much importance. When your dressings are properly applied and adjusted with nicety, they should remain undisturbed for as long a period as possible,—say for twenty-four hours or even longer. But here you will find a difficulty in the management of infants; their habitual restlessness will disturb dressings, will rub off the ointment, and it will

require patience to replace them; but there is no alternative, the thing *must be done*, and you must bring all your inventive faculty to bear upon the problem. We may, however, mention in this place that there are two regions of the body where the oxide of zinc ointment is unsuitable, namely, on the eyelids; for in that situation, getting upon the conjunctiva, it creates irritation and gives pain; and on the scalp, where it would tend to mat the hair together, and prevent a necessary condition in the treatment of ekzema, namely, perfect cleanliness. In both these situations you should substitute the nitric oxide of mercury ointment for the zinc ointment, diluted in the proportion of one part to three of benzoated lard.

And now, gentlemen, if we impress upon you very strongly the value of the benzoated zinc ointment in ekzema as the mainstay of your local treatment, we must also ask you to keep your weather-eye open to the teachings of the first principles of medicine. There may be great local heat of surface; there may be inveterate itching; there may even be considerable pain. Heat, itching, and pain the benzoated zinc ointment will generally allay; but if it fail to accomplish that purpose, there are certain agencies which you may superadd to your treatment, but always without disturbing, or with as little disturbance as possible to, the zinc ointment. For the relief of heat you may apply a spirit or ether lotion to the heated surface by means of a fold of cambric *more usitato*; for the relief of itching you may use, in a similar manner, an emulsion of bitter almonds, with hydrocyanic acid and spirits of wine; and for the relief of pain, you may apply a fomentation of poppy-heads. We believe that you will hardly need more at this stage of the disease. There are certain indications that will tell you when one or other of these symptoms may be expected: heat is usually associated with redness and swelling,

and is apt to come on at night, particularly in infants; it is often the precursor of ichorous discharge; itching also precedes a copious effusion of ichorous secretion, and is a frequent accompaniment of the papulous form of the eruption; while pain, of an aching character, is the associate of a deep red and venous coloration of the morbid skin, and is more common in the pudendum than elsewhere. It may be that there are parts of the skin on which the eruption is scattered and itchy, to which the almond emulsion with hydrocyanic acid would prove a more agreeable application than the zinc ointment; and certain other parts which are moist and exuding, for which an absorbent powder would be more suitable,—such as that of oxide of zinc one part, starch three parts, with a proportion of camphor, consisting of ten or fifteen grains to the ounce. In using the latter, however, it will be needful to take heed to the moment when the surface has become dry, and when the demulcent ointment will be required to be substituted.

In what we have said to you, gentlemen, up to this time, we have had in our mind that special and uncomplicated type of the affection, ekzema infantile; but the same general principles apply to the disease, whatever be the age of the individual. You will sometimes meet with instances, although very rarely in the infant, in which there appears to be an intolerance of fatty applications; but even in these cases, where they exist, we are inclined to ascribe the phenomenon rather to mismanagement or mistrust, or possibly, to an impure ointment, than to any positive repugnance on the part of the skin. Fat is a natural product of the skin, and its natural lubricator and protector, and we should therefore refer the repugnance where it existed, to a morbid state of sensibility and undue irritability of the skin; and, consequently, to a state which would in most instances give way to a steady and prudent use and continuance of the remedy.

As we are now considering the most simple and uncomplicated form of ekzema, and ekzema in its active and, as far as is customary in this affection, in its acute stage, and especially the ekzema of infants, we will now complete the picture of the disease by a few words on the constitutional condition of the patient. The morbid manifestations of ekzema are a strong evidence of an extensively disordered nerve-tissue; the constitutional symptoms manifest the same tendency. Let us, then, see what we have further to do for our patient. We have prescribed the zinc ointment; we have shown what our remedy is; what is to be expected of it; how it is to be used. We have ordered that there shall be no bathing, and as little interference and meddling with our patient as possible. We have endeavoured to show that our patient needs repose, quiet, rest, and proper and nutritious food without stint or limit. What else is to be done? Shall we purge him or physic him? God forbid. If the bowels are confined, we may help them with a little magnesia and rhubarb, or manna, or castor oil; if he be emaciated and exhibit a tendency to waste, we may check his prostration by cod-liver oil; but the one and almost indispensable remedy is the nerve-restorer, arsenic. Try two minims of the liquor arsenicalis three times a day in the combination known as our ferro-arsenical mixture; adopt as much care and vigilance as you please in its exhibition; but do it, and obey; heed not the twaddling of ignorance, but listen to the voice of judgment and experience. We will subjoin the formula, printed a hundred times, lest it may have escaped your memory:—*R Vini ferri, ℥iiss; Syrupi simplicis, ℥iij; Liquoris arsenicalis, ℥j; Aquæ anethi, ℥ij: Misce.* One drachm will give you two minims of liquor arsenicalis. It may be administered pure, and just at the end of the meal, so as to be mixed with the meal in the stomach. Gentlemen, you have done

your duty *sans peur et sans reproche*. Just one word more. If the medicine disagree, stop it.

We now pass on to the second part of the proposition, namely, that after allaying irritation, which is equivalent to removing the local affection, we should aim at *restoring the weakened tissues of the skin to a normal state of health*. Ekzema in the infant, when properly treated and judiciously managed, and barring the accidents of a re-excitement of the disease by vaccination, dentition, and the ordinary infantile disorders, rarely assumes a chronic character; and therefore, when the eruption has subsided, there remains nothing further to be done than to effect as far as possible the restoration of the healthy tone of the skin. And this leads us to say a few words on the subject of prophylaxis. It is a curious paradox, but one not difficult of explanation, that whereas nothing contributes more to the injury of the skin, when the latter is in a state of disease, than exposure to the atmosphere; so nothing, on the other hand, conduces so much to its perfection, when in a state of health, as plentiful ventilation. The prophylaxis of the skin of the infant may be summed up in four words—soap, water, air, and moderation of temperature; and it may be doubted whether these hygienic conditions being properly adjusted, even errors of diet would be capable of exerting influence sufficient for the induction of ekzema. We shall leave it to gynaikologists to arrange in what manner and by what means infants may be rendered hardy without injury to their organization; but we have no hesitation in saying, that when that happy consummation shall be arrived at, ekzema infantile will be infinitely more rare than it is at present. Now, as is well known, ekzema infantile is much more common in large cities and towns than it is in agricultural districts, and amongst the middle and the highest classes than amongst those who are most exposed

to vicissitudes of every kind. If we had to select for your inspection and ensample of a healthy infant skin, we should not seek for it in the metropolis, but amongst the rude villagers of our country side, and especially in the bleak but modified climate of the sea-coast.

The same remarks apply to the adult. How frequently we find that ekzema accompanies the clinical state of the individual, the hot bedding of the parturient female, the prolonged decubitus of the invalid, or the permanent bed-life of the aged and infirm. And our clothing is hardly less objectionable, tending in general to accumulate heat where heat is already in excess; for example, in the axillæ, in the pudendum especially, around the neck in men and around the waist in women. The skin is an air-breathing organ and we suffocate it; we do not sufficiently ventilate it. We look upon the morning cold bath as indispensable to health, and we recommend strongly the exposure of the skin for a time to the air, after the manner of Pliny when practicable; but, in the absence of the appliances of the luxurious Roman, then, in our dressing-room, with the window wide open, if possible. Next to the mere water comes the tonic action of soap; and water and soap are within the reach of everybody. We could tell you how the most delicate organization could be made to bear a cold bath or a cold douche; we could tell you how the perspiring body could equally bear the downpour of the shower douche. This is merely a question of the judicious blending of temperatures, of the hot and the cold, and although certainly not foreign to the question of the prophylaxis of the body, yet too copious a subject for a dissertation on the treatment of ekzema,—for the present our real business. But we must not quit the subject of the bath without admonishing you that rough friction to the skin is not only useless, but even injurious,

and that all the contrivances of rough bath-towels and flesh-gloves and flesh-brushes are the barbarisms of a people who fail to comprehend the genius of the bath. Let your towels be soft, your friction moderate, but ventilate the skin by exposure to the air as much as you please.

We have heretofore, gentlemen, engaged your attention with the treatment of ekzema in an active stage. You know that ekzema is essentially a chronic disease and that we do not admit an *acute* form of the affection; but there is a period during which it is active, another during which it is passive; and then, again, an intermediate, a transitional period, during which the active and the passive are apt, each to manifest itself for a time, and to constitute a very obstinate and sometimes a very perplexing disease. You must bring science and art both to your aid, in the management of ekzema. We have already discussed the application of science in the use of the oxide of zinc ointment, and the manner of employing it, in the administration of arsenic and the way of co-ordinating it; we will now address ourselves to the art of managing the transitional period of the disease, until a true prophylaxis admits of being adopted.

When the inflamed skin underneath the pellicle of dried and concreted zinc ointment has healed, and a new and firm cuticle has formed, we may commence with the use of very gentle friction with the palm of the hand: if this moderate friction should occasion discharge, a little more zinc ointment will be necessary; of course not so much as at first, and with a different object, namely, that of simply moistening the parched and angry skin. The gentle friction may be repeated night and morning, and each time, if the skin will bear it, increased a little in force; and, after the frictions, the tender surface should be dusted over with some harmless powder, such as

zinc with starch ; starch alone ; lycopodium, maize-flour, or simple wheaten flour. Then again, after a few days, a gentle washing with Castile soap may be attempted ; at first with tepid water ; then with cold water ; and later still, if this progressive method should prove successful, with a mildly stimulating soap such as that of the juniper tar or of carbolic acid. It is important, moreover, that after the ablution is completed, the soap should be rinsed thoroughly off ; and that the skin should be thoroughly dried with a soft towel, and that friction during the drying process should be avoided. In the beginning, after the drying of the skin is completed, the tender surface may be dusted over with one of the sheathing powders already mentioned, and, later on, when the skin will bear it, it may be left without any such protective covering and simply guarded against rough friction and rough usage. You will see, gentlemen, that we are still dwelling on ekzema infantile ; for the same principles that apply to it, apply equally to the ekzema of the adult ; and in fact, it is as necessary to use all your foresight and your tenderness in the case of the adult as it is in the case of the infant or of the child.

Another hardening process that may be adopted with the view of strengthening the skin is the use of soap with firm friction to the tender part, and subsequently sheathing it with the demulcent ointment. And, again, a very valuable means, the employment of cold water in the form of a douche, projected by a garden syringe when no more convenient apparatus is at hand, or from the spout of a watering-pot or of a jug.

In the transitional and passive periods of ekzema, there is one symptom that is extremely troublesome, and that will demand all your ingenuity and care to mitigate, namely, pruritus ; and pruritus is associated with a greater or lesser degree of infiltration

of the skin, that we must use our best exertions to disperse. In fact, the pruritus, in a majority of instances, is a consequence of the infiltration, and therefore a radical treatment points to the necessity of removing the objective rather than the subjective, of the cause rather than the effect. When pruritus is a neurotic phenomenon, our best palliatives are, hydrocyanic acid and tar; when it depends on dryness and desquamation, the benzoated oxide of zinc ointment, a lotion of borax and oil, a glycyrrion of tannin, or glycerine combined with the nitric oxide or nitrate of mercury, may be used; but for infiltration in various degrees, stimulant or alkaline applications are necessary, ranging in strength from the mildest up to the strongest.

As an antipruritic, the lotion of emulsion of bitter almonds twenty or thirty kernels to six ounces of water, dilute hydrocyanic acid, two drachms, and spirit of wine, fourteen drachms, is an admirable one, cooling and soothing at the same time. Sometimes borax may be made to take the place of the hydrocyanic acid and the spirit of wine omitted; or the original lotion may be rendered stimulant by the addition of perchloride of mercury, from one to two grains to the ounce. But this, *in limine*, with regard to the use of lotions; however agreeable they may be for the moment, they are all, unless they contain oil or glycerine, apt to leave behind them a certain degree of dryness or perhaps add to the dryness they were intended to mitigate, for dryness of itself may be an incidental cause of pruritus. Hence, conjointly with the lotion, we recommend a smear of the oxide of zinc ointment or one of the milder stimulant ointments; that is to say, that as soon as the lotion is dried, a smear with the ointment should follow.

Borax is an antipruritic when it is combined with oil or glycerine so as to form an emulsion: thus, two drachms of borax, with six of benzoated oil or

glycerine, and seven ounces of emulsion of bitter almonds, form an elegant and useful lotion; but glycerine is uncertain in its operation on the integument, and is sometimes, instead of being a sedative, an irritant of the skin. Our antipruritic resources are, as you will perceive, very limited; sometimes a solution of carbonate of soda, a drachm to the eight ounces; or of carbonate of ammonia of the same strength in camphor julep, is very soothing; or, tincture of opium with spirits of wine and camphor mixture; and sometimes we shall derive advantage from a lotion of sulphuret of potassium; a diluted aconite liniment; or a liniment of aconite with belladonna.

But a more potent antipruritic remedy, although at the same time stimulant, is to be met with in tar, with its hydrocarbon extracts, carbolic acid and kreosote. And we have nothing more competent to quell a raging pruritus than Hebra's famous lotion, composed of *oleum picis juniperi*,* *sapo mollis*, and alcohol, of each an ounce, diluted more or less considerably with water, a pint or even a half-pint. Carbolic acid and kreosote may be combined with distilled vinegar or glycerine, and used in a diluted form, one or two drachms to the half-pint; or with oil in various degrees of concentration.

Gentlemen, we have shown you how you should deal with the inflammatory or active stage of ekzema, and how you should meet the requirements of pruritus proceeding from nerve-irritation or dryness; there are two other morbid conditions which we have now to mention,—namely, infiltration giving rise to condensation and thickening, and nervous irritability. In moderate states of infiltration, the milder forms of stimulant remedies will be found sufficient; such as the nitric oxide of mercury ointment, diluted or pure; the citrine ointment, diluted

* *Pyroligneous oil of juniper*; or, *huile de Cade*; *oleum cadinum*.

or pure; or the ointments of tar and kreosote. These remedies should be either well rubbed into the affected skin morning or night; or, the latter should first of all be well washed with the juniper tar soap, and then the ointments should be used. Sometimes, and especially in the case of the lower limb, advantage will be derived from a thorough friction of the skin with soft soap; and as soon as a little smarting sensation is produced by the process, the soap should be rinsed off, and the skin dried and anointed with the zinc ointment. This process may be repeated once or twice in the day, if the excitement be not too severe. Sometimes after the washing and inunction it may be desirable to place straps spread with the zinc ointment in an imbricated position around the limb; and bind up the whole with a carefully adjusted roller. It is in cases such as these, particularly when they have their origin in varicose veins, that the method of bandaging made use of by Devergie is likely to be successful; namely, a compress and roller soaked in a solution of dextrine in boiling water, four ounces to the quart. This form of bandage requires that there should not be much exudation from the skin; the roller must not be applied too tightly; and it must be left on the limb until it becomes slack, which happens in four or five days; and then it may be repeated as before until the cure is effected.

The natural history of ekzema teaches us that severe pruritus generally precedes the excretion of a copious exudation from the skin, and that the exudation at once relieves the itching; this principle has been taken advantage of by Hebra, for the purpose of furnishing an additional remedy and an additional means of treatment; in a word, a remedy, which by application to the thickened and condensed skin, shall cause the infiltrated fluids to be poured out upon the surface in the same way that Nature performs the act in ekzema ichorosum.

The remedy which Hebra recommends is the potassa fusa variously diluted, according to the effect that is intended to be produced. Very commonly he uses a solution of equal quantities of caustic potash and water, and we have pursued the same practice with infinite advantage; in fact, it may be truly said that some of the more condensed and hardened forms of ekzema will yield to no other means. The solution is painted on the surface by means of a sponge brush; the viscous ichor is seen to ooze forth from the thickened skin even in a few seconds; the bloated tissue cells are made to disgorge their excessive contents; and in a few minutes, one of the most passive and inveterate forms of the affection is transformed into an active stage, and becomes amenable to the milder principle of treatment applicable to the inflammatory condition of the disease.

If there be one thing that distinguishes ekzema more than another, it is nervous irritability—a condition easily understood when we remember that ekzema is an inflammation of a part of the body abounding in nerves, and that the papillary stratum of the derma is a stroma composed almost entirely of a capillary rete and nerve plexuses. To this special organization are to be referred the teasing and violent pruritus that accompanies this affection; its sympathies with states of the economy; its exacerbations; its sometimes frenzied torments; and its not unfrequent intolerance of every remedy that can be proposed for its relief. We have evidence that such is the case by the comfort which is often given by an application that a few days before drove the patient distracted, and by the pain and distress frequently caused by the most soothing remedies, and, first among these, by the oxide of zinc ointment. When this state of nervous irritability prevails (and it may be present in various degrees, from the slightest up

to the most confirmed)—when every known application creates pain or awakens dread and alarm—our only resource, but a most valuable one, is nitrate of silver, in solution, of various strength, from two grains to the ounce up to a drachm, and dissolved, as the case may be, in distilled water or in nitrous ether. Such a solution painted over an inflamed and irritable surface, acts like a charm; from bearing nothing the ekzema will bear everything; and a dressing with the zinc ointment becomes its greatest solace. But it may happen, and very probably will do so, that the irritability will in the course of time return, in which case the remedy should be repeated; and it may be repeated again and again, and for as long a period as the nervous irritability presents an obstacle to the cure of the eruption. All that we ask of you is, that you master the principle; that you assure yourselves that the evil you are contending with is, in fact, nervous irritability; and that you employ the remedy—not because you have heard that it is a good thing, not because you have known it to be useful in a previous case—mere empirical reasons,—but with the direct object of subduing that irritability by the best means that the *iatrium chirurgicum* affords.

Gentlemen, you must take this as a sketch of the general principles of *topical therapeutics* as applicable to ekzema in general. There is a special treatment suitable to particular forms and to particular cases; and these we may have occasion to advert to hereafter; at present, and to complete the treatment of the subject in hand, it will be necessary to take a glance at the *constitutional therapeutics* of this important disease. We have already laid down the general axiom that support of the powers of the system must be the main object of our labours, and to this end the functions of the body should be regulated; such faults of debility as we are able to

find should be redressed; and that we should complete our work, if need be, with the aid of a medicine which, from its known valuable agency on the skin, has acquired the reputation of being a cutaneous specific, namely, arsenic. In the majority of cases nothing could be more injudicious than beginning our treatment with arsenic, because there are always certain general indications to be fulfilled, to which arsenic is unadapted, and the fulfilment of which clears the way for the use of that excellent and admirable remedy.

It is now that you will perceive the advantage of such a grouping of ekzematous disease as we have set forth when discussing the causes of this affection; for example, nutritive, assimilative, and neurotic; and having determined approximatively under which of these groups your patient should be classed, you will then put in practice a treatment that is to improve nutrition, or digestion and assimilation, or innervation, as the case may be. If you decide that the causes of the disease are simply nutritive, your treatment should be, good and proper food and arsenic; if in your opinion the digestive and assimilative organs are at fault, then arsenic would be inappropriate; and if the symptoms lean in the direction of a neurotic debility, the digestive functions being regular, there can be no obstacle in the way of your beginning arsenic at once. Hereditary and congenital ekzema generally fall under the nutritive class, and acquired ekzema under the head of assimilative or neurotic. In the neurotic forms of ekzema, and particularly when accompanied with pruritus, Dr. Frazer advises the use of strychnia in doses ranging between $\frac{1}{50}$ and $\frac{1}{25}$ of a grain, three times in the day, combined with phosphoric or nitric acid, and infusion of orange-peel or cloves.

There are few medicines of a tonic character that come to our aid in the treatment of infants and children suffering under ekzema beyond cod-liver

oil, wine of iron, phosphate of iron, and arsenic. As age advances into youth we have the further help of vegetable bitters, of the mineral acids, and quinine; and in adult life the field of tonics expands somewhat more: there are the citrate of iron and quinine, strychnine, and phosphoric acid; and at the head of all *facile princeps* stands arsenic, of which the British Pharmacopœia affords a copious variety of forms—arsenic with potash, arsenic with soda, and arsenic with hydrochloric acid. There is one preparation of arsenic that you will never want in the treatment of ekzema, and we caution you to avoid it, namely, the triple solution of Donovan, the liquor hydriodatis hydrargyri, et arsenici.

In further assertion of the importance of such a division of causes as is expressed by the terms nutritive, assimilative, and neurotic, we may observe that you will frequently meet with cases that will tempt you to the use of such expressions as dyspeptic ekzema, gouty ekzema, rheumatismal ekzema; such distinctions as these are utterly uncalled for in practice, but they point a moral; they show that, in the treatment of such cases, you must always have before your eye the dyspeptic, the arthritic, and the rheumatismal tendency or diathesis, and all these we include under the general denomination of assimilative. And, if we suppose such a case, we should begin our treatment with nitro-muriatic acid and a bitter, such as gentian, or calumba, or orange-peel, and a pill consisting of the compound colocynth extract, massa hydrargyri, and extract of henbane, every second or third night, as the case may be; and in the case of an arthritic or rheumatismal complication we should not fail to prescribe a grain of the acetous extract of colchicum every night. In other cases, where more debility of the mucous membrane seemed to be present, or after, by the previous course, we had secured a healthy action of the liver, we know of no remedy so perfect as the citrate

of iron and quinine. And in younger persons with some little feverishness of system we should prefer small doses of sulphate of magnesia with sulphate of quinine and sulphuric acid, either in combination with infusion of roses or infusion of orange-peel.

We have no fear of your retaliating upon us with the remark that this treatment is nothing more than would be adapted to any case in which assimilative debility was present in the system: our answer would be simply, Exactly so; it is this that we have led you to expect; this is the very gist and essence of our teachings; we declare that ekzema, as well as other cutaneous affections, is to be treated precisely upon the same principle as diseases in general. And if we have recourse to arsenic more frequently than in other diseases, it is only that it has been proved to be an excellent remedy, and has enjoyed and enjoys a reputation in the treatment of a considerable number of diseases besides those of the skin.

The form of arsenic to be selected in your treatment is of very secondary importance; you may take the potash solution of Fowler, the soda solution of Pearson, or the acid solution of de Valangin. Now that the British Pharmacopœia has equalized the strength of liquor arsenicalis and of the acid solution, the dose of these two preparations will be the same; the liquor sodæ arseniatis of Pearson being somewhat weaker. You will, however, find an advantage in departing from the formula of the British Pharmacopœia by omitting the tincture of lavender, the flavour of which is generally disagreeable to the patient, and the more so, as he is ordered to take the medicine with his meals. We have always advocated small doses of arsenic, and in a long practice we have seen no reason to depart from that principle; but we have no hesitation in prescribing it for infants of a few weeks old. It is

a medicine which seems almost expressly adapted for them, it answers so well; and in a short time after taking it, the improvement in their condition and nutritive power is often very remarkable.

The dose of the arsenical solution for the infant is one or two minims three times a day; and for the adult, three or four minims. We make a distinction between a tonic dose of arsenic, which we believe should be as small as is here directed, and an alterative dose as required for lepra, which may mount up to five or six minims. But we have a good deal to learn yet with regard to the therapeutical properties of arsenic. Our favourite method of administering the remedy is by the ferro-arsenical mixture, of which we have just stated to you the formula; the strength of arsenic is to be regulated by varying the proportions of the liquor arsenicalis and the syrup, and you will find a convenience in always writing the formula in the same way; for example, the first and the fourth line are to remain stationary, the variations are to be made only in the two intermediate constituents, the syrup and the liquor arsenicalis, which together should make four drachms. Half a drachm of liquor arsenicalis in this formula will give one minim for a dose, and each additional half-drachm will increase the dose by a single minim. The convenience we refer to is not a small one, namely, the avoidance of the possibility of making a mistake in the quantity. Dr. Durkee combines the iodide of potash with liquor arsenicalis in the treatment of ekzema infantile, two grains of the former to one minim of the latter. His favourite remedy, however, is the *syrupus iodidi ferri*, which he regards as laxative, diuretic, and antipruritic, and administers in doses of five to fifteen minims three times in the day.

Having, then, to deal with a medicine that requires care in the handling, we do our best to hem it round with defences; we are exact in our formula; exact

in the dose, careful as to the time of administration ; and anxious in our observation of its effects. You will remember that the arsenical dose should be small, in order that it may not disgust the taste by its quantity,—we limit it to one drachm ; it should be administered with the meal, in order that it may be mingled with the chyme in the stomach and transmitted with the chyme to the chyle, and thence into the system with the nutrient material of the food ; and it should be administered at or towards the end of the meal, to insure its not being brought in contact with the mucous membrane. Moreover, we watch narrowly to see that it occasions no nausea, no gripes, and no prostration of power : these are its primary effects when it disagrees with the system ; and there are sundry subsequent effects, such as a puffy swelling of the eyelids, the cheeks, or limbs ; and later still, congestion of the vessels of the conjunctiva.

We must confess to have seen very much benefit result in certain chronic cases of ekzema from the use of small doses of the perchloride of mercury ; but our customary success with tonics, with which Plummer's pill and small doses of blue pill have been frequently conjoined, and arsenic, has prevented us from giving special attention to, no doubt, a valuable remedy. Dr. Frazer, in an excellent practical paper on ekzema, published in the *Journal of Cutaneous Medicine* (vol. i., p. 63, 1868), advocates very warmly the merits of the perchloride, which he prescribes in doses of $\frac{1}{24}$ to $\frac{1}{16}$ of a grain three times a day in decoction of cinchona ; and sometimes in infusion of cinchona combined with decoction of cetraria islandica. Dr. Durkee is also favourable to the same remedy, which he recommends in doses rising from $\frac{1}{60}$ to $\frac{1}{30}$ of a grain in cases of ekzema infantile, and administered once or twice daily. The perchloride of mercury has of late times received much praise from a variety of sources, and

we hear of it as a restorer of nutrition, of appetite, and strength; an improver of the complexion of the skin and muscular power; and a help to the growth of the body.

CHAPTER III.

EKGZEMATOUS AFFECTIONS.

THE term Ekzematous affections, or, in other words, ekzema and its allies, suggests the idea, which experience proves to be correct, that there exist certain modifications of ekzema apart from its ordinary manner of development, apart from the phases of difference which naturally belong to it and which we have already very amply considered. Ekzema, be it remembered, presents to our observation as its pathological type an affection of the surface of the derma, and an affection of its follicular portion; an exudation both intrinsic and extrinsic, the nature of the exudation being a limpid, viscous ichor, or a fully elaborated pus; and a desquamation which one while is the simple exfoliation of the normal epidermis, and another while the product of desiccated secretions. Now, it so happens that one or other of these processes may exist so entirely alone that the general term ekzema ceases to be applicable, and we find a convenience in having recourse to other terms. This occurs where the eruption is one of papulæ solely, in which case we have at hand the word *leichen*; or where it is solely one of superficial pustules, which we express by the term *impetigo*. Both the papulæ of leichen and the pustulæ of impetigo may be so intimately commingled with the other pathological lesions of ekzema, as to constitute a part only of the whole; or they may exist in a form so distinctly separate, that, but for previous observation and

experience, we might be led to regard them as distinct diseases. It is thus that we include, under the denomination of ekzematous affections, not ekzema alone, but likewise *leichen* and *impetigo*.

Then there is an affection which is papular, vesicular, pustulous, and squamous, often presenting together and at the same time all the forms which we have now named, often possessing them separately, but differing from the typical ekzema chiefly in the nature of its cause, namely, a minute animalcule, the *acarus*, which lives and burrows in the epidermis and is a true parasite of the skin. This is the disease *scabies*; which, but for its living cause, would be an ordinary ekzema; but which, in consideration of its pathological phenomena, must nevertheless be regarded as an ekzematous affection; and, moreover, very frequently runs its course as an ekzematous affection after the *vera causa* has been removed.

There is another affection that, so far as its cause and certain of its lesions are concerned, might be regarded as belonging to the ekzematous family, and so we have considered it hitherto; that affection is the *gutta rosea*. Like constitutional ekzema, it takes its origin in derangement of assimilation; it presents a multiple lesion consisting of hyperæmia, infiltration, exudation, and suppuration; and it yields to the same method of therapeutical treatment. But the progress of dermatology has rendered necessary the foundation of a new group of cutaneous affections, namely, those of the follicular system; and this group will absorb the *gutta rosea* and withdraw it from the ekzematous affections, bringing it, by virtue of its principal pathological seat, into relation with a disease with which it has hitherto been classified and somewhat confounded, namely, *akne*.

In our foregone review of the ekzematous affections, we have endeavoured to show that ekzema, in

certain of its forms, and at a chronic period of its existence, has received the pseudonyms of pityriasis and psoriasis. We have now only to add, that the other members of the ekzematous family, besides ekzema itself, are leichen, impetigo, and scabies. Gutta rosea, for the reasons already given, we shall omit, and reserve it for consideration in conjunction with a highly important group of disorders,—namely, the *follicular affections of the skin*.

LEICHEN.

LEICHEN,* since the days of Willan, has been universally recognized as the denomination of a papular eruption of the skin; and, indeed, as employed by him, was principally assigned to the form of eruption which in our own time we regard as an ekzema papulosum. At present we apply the term to an eruption of papulæ, in which all other signs of ekzema are absent, and which exhibits no tendency to degenerate subsequently into ekzema. The true papula is a prominence produced by hyperæmia and infiltration of the coats of a follicle of the skin; while its breadth is governed by the extent to which the hyperæmia and infiltration spread into the adjoining tissue. The simplest idea that can be given of a leichen is that state of erection of the follicles of the skin which is termed *cutis anserina*. *Cutis anserina* is a physiological leichen, the prominence of the papules being produced partly by muscular action and partly by contraction of the inter-follicular capillary vessels; but when this same erection of the follicles is occasioned by turgescence of the capillary vessels, infiltration, and hypertrophy, the leichen is pathological. Such, in fact, is the leichen tropicus, or

* Leichen, in the Greek, λειχην, being spelt in the second syllable with η, should be pronounced leichên.

prickly heat, a papular eruption which is sometimes almost as transient as *cutis anserina*. Pathologically, it will be seen that leichen encroaches in a certain measure on the territory of diseases of the follicles, and some little judgment will be needed in defining the exact boundary of the two.

Leichen is very generally a *scattered* eruption, disseminated more or less thickly or sparsely; sometimes it is equally remarkable for an *aggregated* and clustered or circumscribed character; and sometimes, in common with other cutaneous eruptions, it has a tendency to centrifugal or *serpiginous* growth. Very commonly it is *pruriginous*, and sometimes it is remarkable for the *figure* of the papulæ, for their *colour*, and for their development around the shaft of the *hairs*. This diversity of character has suggested the names by which its forms or varieties are known, as also the number of those varieties. For example, the scattered forms of the eruption are represented by leichen simplex and leichen tropicus, as well as by leichen pruriginosus, leichen urticatus, and leichen strophulosus. The aggregated forms have received the names of leichen circumscriptus, and leichen annulatus or circinatus, with its subvariety gyratus. The serpiginous form is represented by leichen annulatus; and the pruriginous forms by leichen tropicus, leichen pruriginosus, and leichen urticatus. The forms exhibiting a peculiarity of figure are leichen strophulosus, leichen urticatus, and leichen planus. Colour is illustrated by leichen lividus; and seat, in relation to the hairs, by leichen pilaris. In a tabular scheme we may arrange these varieties of leichen as follows:—

Simplex,	Urticatus,
Tropicus	Strophulosus,
Circumscriptus,	Planus,
Annulatus s. circinatus	Lividus,
Pruriginosus,	Pilaris.

LEICHEN SIMPLEX is an eruption of small pimples, conical in shape, somewhat less than a line in diameter, more or less red in colour, and generally extremely itchy. They are distributed scantily or abundantly over a part, and less frequently over the whole of the body. They are sometimes dispersed at uniform distance, like the follicles themselves; and at other times are grouped in corymbose clusters. Sometimes they are distinct, and at other times united into a patch of variable extent by an erythematous base. From the very nature of their pathological seat they must always be distinct, excepting where they are, as it were, blended by an infiltrated or œdematous base, in which case their discrete character is partially lost. Leichen simplex is very commonly symptomatic of disordered digestion and assimilation; is frequently met with in the spring and autumn season of the year, and especially during the summer season; and its concurrent symptoms are sometimes sufficiently severe to suggest the idea of a *leichen febrilis*. At other times the eruption is due to local causes, and is more or less partial; limited, for example, to the region of the body covered by a heating article of clothing.

Like other forms of chronic eruption, the pimples of leichen are apt to be reinforced from day to day by successive crops; they remain prominent for several days, and then gradually subside, sometimes without any disturbance of the cuticle, at other times with desquamation. The eruption is liable also to be aggravated by the means adopted for the relief of the itching, sometimes by friction and sometimes by scratching, more or less violent. And when these local injuries have been severe, the part is apt to put on the semblance of ekzema.

LEICHEN TROPICUS, or prickly heat, is a leichen simplex provoked by the irritant action of excessive heat of atmosphere; and although common in

tropical climates and rare in our own, it is nevertheless occasionally imported from southern countries, or prevails amongst ourselves during a very hot season. Like its milder prototype, it occurs on the clothed parts of the body, and is very rarely seen on the face and on the hands. Its pimples are red, and for the most part without red bases, and there is an absence of interfollicular suffusion, excepting where severe friction or scratching has been employed for the relief of the pruritus. The latter symptom, however, supplies the predominating character of the disease; it is always violent, and generally makes its attack in paroxysms; is excited and aggravated by the stimulus of food, by the heat of dress and bedclothing, and thoroughly destroys comfort and rest. The form of the pruritus is expressed in the popular name of the affection, namely, prickly heat; but there is also, combined with this prickling, a varied amount of itching and stinging. In our own climate leichen tropicus has a duration of several weeks; in the tropics it is apt to continue until the constitution has become habituated to the climate, or until the climate undergoes a favourable change.

LEICHEN CIRCUMSCRIPTUS.—Leichen simplex, and its tropical representative, leichen tropicus, are both either general or partial; but the term "circumscriptus" introduces us to an eruption which is purely local, and limited to one or more isolated spots, generally of a circular figure, abruptly circumscribed, varying in diameter from one or two to several inches in extent, and studded all over with thickly-set pimples, the pimples of the circumference of the patch being somewhat larger and better defined than those of the centre. In these circumscribed leichenous patches there is generally some degree of suffusion which unites the bases of the papulæ. The interpapular portion of the skin is

wrinkled, and there exists more or less epidermic exfoliation.

LEICHEN ANNULATUS SEU CIRCINATUS calls our attention to another not uncommon phenomenon of dermal pathology, namely, the erpetic or serpiginous tendency of cutaneous disease. The patches of leichen circumscriptus are stationary, or, if they exhibit any disposition to increase, their enlargement is slow, and the area of the patch undergoes very little change. Occasionally, however, the papulæ subside in the centre, and the circumscribed patch is converted into a ring, bounded by a border of variable width. This is an example of the circumscribed form of the eruption passing into that of the annulate. But the true leichen annulatus develops its annulate character from the very first. Two or three or more papulæ are seen to be united by a suffused base, the base extends by the circumference, the papulæ subside, new papulæ appear at the margin, generally a single row, and so the ring is established. The area of the ring quickly loses its redness and becomes yellowish, it is slightly wrinkled, and throws off a mealy exfoliation. The circles range in size from a quarter of an inch to several inches; they are often numerous, as upon the chest and upon the back, and occasionally the latter region is covered almost entirely by an assemblage of these rings blended confusedly together, the area of the broad patch being made up of broken segments of rings, separate papules, and a yellowish-brown, wrinkled, and furfuraceous base, and the boundary being constituted of segments of rings partly smooth and partly papular, a few bright red papules overtopping the rest every here and there. This kind of eruption is like the rest of the family of leichen, highly pruritic, and is often associated with a form of pityriasis of the scalp. To the irregular and confused figures resulting from the

blending of a number of circles or segments of circles, the term *leichen gyratus* has, very characteristically, been applied.

The annulate variety of leichen now described is remarkable for its apparently feeble hold upon the skin, for its superficial and fugitive nature; but there is another annulate form, which is less rapid in its serpiginous growth, which affects the follicles more deeply, and which throws up a stronger margin of papulæ, and papulæ of a larger size and more persistent character. This form of the eruption is met with sometimes at the root of the neck, upon the shoulders, and upon the chest, and sometimes around the circumference of the perineum. In the latter situation it entitles itself to the designation of *leichen marginatus*, and in some instances, doubtless, has been mistaken for ekzema marginatum. It is in this latter variety of eruption that the phytiform degeneration of the epithelium of the follicles was discovered by Köbner, and described by him and by Dr. M 'Call Anderson; and this important fact, together with its extreme obstinacy, serves to bring it into the category of follicular diseases.

LEICHEN PRURIGINOSUS.—The papulæ which are excited upon the skin by scabies are remarkable for their itchy propensity; and these papulæ, of a pale colour, sparsely scattered over the surface, and often only discoverable after the act of scratching, will frequently continue for several weeks subsequently to the local cause of scabies, the acarus being destroyed. At other times they are the indication of a lingering, perhaps a solitary acarus in the epidermis, but not detectible after the closest search; and again, they may be present where no scabies, and, consequently, no acarus, has existed. In the latter form these scantily distributed papulæ constitute the prurigo mitis of Willan, such is their persistency, and such the severity of the itching by which they

are accompanied. They are found dispersed over every region of the body, but are most frequent on the abdomen and limbs, on the front of the forearm, the inner side of the thigh, and behind the inner ankle; and when they have been much scratched or torn they are apt to be covered with a small brown or blackish scab.

LEICHEN URTICATUS is another variety of pruriginous leichen, partaking, as its name implies, of the papular character of leichen, and also presenting the tubercular prominence of urticaria. It is an eruption common to children and rarely seen in the adult, and consists of large papulæ, sometimes sparsely scattered, sometimes occurring in clusters of three or four, and dispersed over the whole body, but most abundantly upon the shoulders, the loins, the abdomen, and the limbs. In general appearance the papulæ resemble the bite of the bed-bug; they are surrounded by a broad areola of redness; when scratched the central papule looks bleached, like the wheal of urticaria, and when the head of the pimple is torn off it becomes surmounted by a small brown or black scab. The eruption is successive, a few pimples appearing every night, and their development being attended with excessive pruritus. They are excited by emotion and also by the warmth of bed; their itching destroys sleep, and after a while they endanger the health of the child by prolonged irritation. The eruption is always obstinate, lasting for many months, and sometimes extremely rebellious.

LEICHEN STROPHULOSUS is a papular rash met with on the delicate skin of infants, and occupies a separate position rather in compliment to Willan than for any practical end. The papulæ are proportionately larger in infants than in the adult, and present some variety in distribution, in colour, and

in duration. The *strophulus intertinctus*, or red gum, and *strophulus confertus*, the rank red gum, or tooth-rash, would seem, by their name, to have been associated in the mind of Willan with the development of the teeth, a fruitful source of infantile irritation; while the term *strophulus* is suggestive of disorder of the alimentary canal. *Strophulus intertinctus* is a commingling of bright red papulæ, red puncta, and erythematous blotches, in patches of variable size, commonly met with on the cheeks, but also not unfrequently distributed upon the body and limbs. *Strophulus confertus* consists of papulæ which are less vividly red and more uniformly distributed, and which, whenever they occur in aggregated patches, take on the exudative character of ekzema. *Strophulus volaticus* is simply a more transient form of the preceding; and *strophulus albidus* and *strophulus candidus* are distinguished by the absence of redness, wholly or in part.

LEICHEN PLANUS is a very remarkable form of eruption, consisting of papulæ which are broad at the base, flat and seemingly glazed on the summit, slightly umbilicated, of a dull purplish-red colour at first, in certain situations discrete and isolated, in others, united by a hyperæmic and infiltrated base into patches of variable extent. The eruption is chronic in its course, generally symmetrical, sometimes itchy and sometimes free from pruritus, and leaves at its decline a deep brown stain on the skin. Heat and exhaustion are its common exciting causes; it occurs for the most part at the mid-period of life, and its favourite localities of development are the front of the forearm, especially just above the wrist, the loins, the abdomen, the hips, the knees, and grooves of the skin produced by the pressure of dress, for example, of the stays and of the garters; occasionally we have met with it also on the palm of

the hands, the sole of the foot, the tongue, and the buccal membrane of the mouth.

The purplish-red colour; the discrete distribution; the flat, somewhat depressed, summit; smooth, horn-like or glazed surface, and central hilum, the aperture of a follicle choked with epithelial exuviæ, are the pathognomonic characters of this eruption in its papular state; and even in its aggregate and diffused form these pathological characteristics are not wholly effaced. In the latter condition the patches bear a close resemblance to lepra; the affected skin is thickened and somewhat raised, and coated over with a rough but thin layer of scales of broken epidermis mingled with the exuviated epithelium of the follicles. The squamous matter, however, is not white as in lepra, but yellowish and greyish, and a careful inspection detects without difficulty an obvious difference. Moreover, around the circumference of the patches may always be seen a few isolated papulæ presenting the ordinary discrete type.

The pathological essence of leichen planus is inflammation of a follicle attended with accumulation and impaction of its epithelium; the glazed summit of the papule is not a scale, and in the discrete form of the eruption it subsides with the rest of the papule; but in the aggregated patches it is thrown off by exfoliation, in common with the inter-papular epidermis and the epithelial exuviæ of the follicle. In this state, if a portion of scale be carefully raised, it may be seen to be studded upon its under surface with conical cylinders which have been drawn out of the tubes of the follicles.

There would seem to be good reason for belief that the leichen planus of ourselves is identical with the leichen ruber of Hebra, the structure of the papule in one case and its colour in the other being taken as the specific character of the eruption. If, however, this surmise be correct, leichen planus is

more common in England than in Austria, and at the same time very much milder in its course. With us it must be regarded as a trivial affection, whereas, in the practice of Hebra, it was always grave and very commonly fatal.*

LEICHEN LIVIDUS and LEICHEN PILARIS are simple follicular papules, in the one instance distinguished by a purple or livid colour, resulting from retarded circulation; in the other, by embracing the shaft of a hair at its issue from the skin. Both these forms are seen the most commonly in the lower extremities, and especially below the knee; and leichen lividus is sometimes associated with the petechiæ of purpura.

IMPETIGO.

Ekzema, leichen, impetigo, scabies,—herein is a heterogeneity of terminology that at first sight is somewhat perplexing; ekzema and leichen, both of them Greek; impetigo and scabies, both Latin. Moreover, there can hardly exist a doubt that impetigo and scabies, as used by the Latins, were exactly synonymous with the ekzema of the Greeks. But we shall best serve the purpose of elucidating the problem, not by creating unnecessary difficulties, but by defining, with all the precision we are able, the scope of these several terms as they are employed at the present day. Ekzema, as we have seen, is characterized by several pathological lesions, of which two are papulation and pustulation. Leichen and impetigo represent these latter lesions when they are present alone: leichen is a papule, and impetigo a pustule. When, however, leichen and impetigo constitute a part of ekzema, the forms are known by the names of ekzema papulosum or ekzema

* JOURNAL OF CUTANEOUS MEDICINE, vol. III., page 54; also page 117.

leichenodes, and ekzema pustulosum or ekzema impetiginodes. Thus it is that we are enabled to perceive the close alliance of these several affections, distinguished by such a diversity of terms; and by the same means we acquire our strongest argument for considering them in the aggregate as *ekzematous affections*.

By the word "pustule," at the present day, we mean a vesicle containing pus; but the term was in use long before the matter of pus was identified or understood, and is employed by Celsus to signify an eruption of prominence merely, giving rise to unevenness or roughness, and wholly independent of the nature of its contents, being sometimes a solid papule, sometimes a vesicle, and sometimes a vesico-pustule. Now, however, we recognize two principal kinds of pustule,—one superficial, a sero-pustule or muco-pustule, termed *psydrakion*, literally a cold or non-inflammatory pustule; and *phlyzakion*, a more deeply-rooted or inflammatory pustule. The former is the pustule of impetigo; the latter, that of ekthyma.

Impetigo, therefore, is an eruption of superficial pustules, of minute size, developed on an inflammatory base, of a pale yellow colour, drying up in the course of a few days into an amber-coloured scab, or forming a crust of considerable thickness by continued secretion of a purulent fluid. The purulent secretion varies in its tint of colour and also in its density, being sometimes brightly yellow, sometimes of a cream-like hue; sometimes thick and viscous, sometimes diffuent and serous. The yellow colour of the crusts suggested to the Greeks the idea of dried honey, which they expressed by the term *meli-tagra*. And the scabs and crusts remain adherent to the inflamed surface for one or two weeks and then fall off, leaving behind them no permanent trace of their existence.

This eruption presents us with two principal

varieties, namely, *impetigo figurata* and *impetigo sparsa*; *impetigo figurata* being an aggravated form of the disease, consisting of circumscribed patches of various extent; and *impetigo sparsa*, a scattered form, in which the eruption is dispersed in single pustules, or in small clusters of pustules, more or less extensively over different regions of the body. A common seat of *impetigo* is the face, where it may occur in small circular patches an inch or two in diameter, situated near the angles of the mouth or nose, or it may cover the entire surface of the face.

Impetigo makes its appearance in the form of small red spots, which rapidly coalesce; in the centre of each red spot there speedily rises up a minute pustule; the pustules increase quickly in size; and if there be several or many pustules, they constitute a coherent cluster, surrounded by other red spots and incipient pustules, and sometimes bounded by an abrupt border. There prevails in *impetigo* a decided tendency on the part of the pustules to spread by the circumference; sometimes the spreading periphery assumes a semi-pustular or vesicular character; and then we have presented to us a form of the eruption which is termed *impetigo phlyktænodes*.

Impetigo is an eruption evincing a lower degree of power than either *ekzema* or *leichen*, and is met with chiefly at the nutritive period of life; in weakly children; among the debilitated and cachectic in youth and in the adult; and among the poorer classes. One of its forms, namely, *impetigo phlyktænodes*, is frequently epidemic, prevailing in districts and families, and leading to the suspicion of contagion. Such cases are met with not unfrequently among the out-patients of hospitals, but are rare amongst the wealthier classes; and the common occurrence of the eruption in several children of a family at the same time has induced Dr. Tilbury Fox

to regard it as contagious, and to give it a name expressive of contagiousness, namely, "impetigo contagiosa."

SCABIES.

None of our terms has been more diverted from its original signification than the word scabies. In the language of the Latins it stood as the representative of the psora of the Greeks; the disease implied by the terms psora and scabies was the same; but, by degrees, it has fallen from its high estate, and is limited at present to that condition of irritation and eruption of the skin which is induced by the presence in the epidermis of the *acarus scabiei*, the *sarcoptes hominis* of Latreille.

The eruption of scabies is one of a multiple lesion; there are papulæ, vesiculæ, pustulæ, and desquamation, sometimes all of these together, at other times one only or two, the precise form of the lesion being governed by the temperament, the age, and the state of health of the patient. In the infant, abounding in fluids and endowed with weak and sensitive tissues, vesiculæ, giving out a viscous and colourless exudation when broken, may predominate, with here and there a sprinkling of vesico-pustules and a scattered papulous rash distributed over the general surface of the body and limbs. In the adult, with drier and firmer solids and less irritability of tissue, the eruption may be chiefly papulous; while, in the cachectic, the leading feature of the eruption may be the development of vesico-pustules. The amount, therefore, and the kind of eruption, are not to be regarded as evincing a greater or less severity of the disease, but merely the degree of sensitiveness, of irritability, of the organization of the individual.

It is worthy of note that in scabies there exist two forms of irritation; the one, a direct irritation, corresponds with the habitat of the *acarus*; the

other is indirect, if you will, sympathetic or propagated, and is evinced at a distance from the focus of the cause. The habitat of the acarus is the hands; in the infant the feet as well as the hands; and, next to the hands, the organs of generation, the podex, and the boundaries of the axilla, parts which are easily reached and are subject to be touched by the hands, the hands being the original source from which and by which the animalcule is conveyed. These considerations weigh with us in forming our diagnosis: a suspicious eruption, papulous and pruritic, be it ever so abundant upon the body and limbs, loses its claim at once to be regarded as scabies unless it be present also upon the hands. The state of the hands is our first inquiry, our first investigation, in establishing the diagnosis of scabies; and if there be no eruption on the hands, a *prima facie* case is made out against the presumption of scabies.

Let us glance for a moment at the natural history of the acarus in its relations with the skin. The animalcule is of three kinds, the impregnated female, the young of both sexes, and the male, and the habits of these three members of the same family are widely different. The impregnated female bears away our chief interest in connexion with the development and maintenance of the disease, and is the object of our search for the confirmation of our diagnosis. Impelled by the maternal instinct she seeks the hands to excavate her burrow for the deposit of her ova, for the security of her young,—and well knows the adept where to find her,—not in the exposed regions of the hand, where danger of extinction might impend, but in the grooves of flexion, and especially between the fingers. And even here there is a difference between the soft, moist hand of infancy and the horny palm of the adult. In the adult our search would commence with the soft skin of the interdigital surfaces; then

we should examine the ulnar border of the hand ; and, lastly, the grooves of flexion of the wrist. But in infancy and childhood we should be content with the palm of the hand for our observation, where the epidermis is thickest, and we should expect to find the burrows starting from the grooves of flexion and extending their gentle curves and zigzags into the open space. In the feet also, in infants, the burrows are to be sought for in the thickest portions of the epidermis, in the sole, and upon the borders of the foot.

Cuniculus is the burrow of the rabbit, but the cuniculi of the acarus are more artistic than those of the burrowing mammal. The mother acarus begins her operations, when she can, from one of the grooves of motion of the skin, which, like the trench of the besieger, protects her from danger while she opens the ground ; she then bores steadily onwards parallel with the surface, until she reaches a distance of safety and convenience ; here she constructs a vaulted cave, wherein she deposits two pairs of ova, and perforates the vault of her chamber that she may breathe easily herself, and that through the opening her young may receive air as soon as they are hatched. This being accomplished, probably the operation of a single night, she pushes her tunnel onwards the following night, until space for another chamber, ventilated from above as before, is obtained, and here a second double pair of ova are deposited ; and so she goes on, night after night, until her tunnel has reached a length of half an inch, and until she has deposited probably from twenty to forty or fifty ova.

There is nothing so important to the medical man, in connexion with scabies, as the recognition of the cuniculus of the acarus. It is easy enough, having found the cuniculus, to discover and capture the animalcule, the indisputable proof of scabies ; but for ordinary diagnosis the demonstration of the

acarus is altogether unnecessary, the cuniculus is the really important pathognomonic evidence. Therefore it is not too much to require of the student of dermatology that he should make himself thoroughly at home with the appearance of the cuniculus of the acarus, and, like a true sportsman, be familiar with the characteristic tracks of his game. Let us look once again over our guiding points, at the outside features of the lair of our prey. On the skin of the interdigital surface of the fingers, on the ulnar border of the hand, on the folds of flexion of the wrist, and, more distinctly still, along the embankment of the lines of motion of the palm of the hand of infants and children, we shall see, in scabies, a whitish, almost glistening line, fluted somewhat like a string of beads, more or less curved in its course, starting at right angles from the grooves of motion, terminated abruptly by a slightly bulbous end, and ranging in length from two or three lines to half an inch. Such is the cuniculus scabiei, and if it be inspected more closely, it may be seen that it is not strictly white, but greyish in appearance, the greyiness resulting from the presence of a blackish matter in the cuniculus, the fæces of the animalcule: then, if of any standing, the proximate end of the cuniculus is ragged from the wearing away of its roof; sometimes it is marked by a series of black spots, occasioned by the intrusion of dirt into its air-holes; sometimes it crosses the dome of a vesicle, and may be seen traversing the epidermic wall; and sometimes, when such a vesicle has dried up, there may be seen a circular area bounded by a ragged edge, the remains of its base, and the cuniculus appears to be a continuation of this area.

But suppose we want to dislodge the acarus, to exhibit her to the outside world, we then fix our attention on the slightly bulbous end of the cuniculus. It is remarkable for its whiteness; it looks as if it had within it a little white globe, and this

little white globe, bounded at the extreme end of the cuniculus by a reddish-brown semi-lunar streak, thick in the middle and tapering to the ends. This little white globe is in reality the animalcule, and the reddish-brown semilune the chytinous covering of its head and arms. Puncture the dome of epidermis at this point with a fine needle, and briskly twitch it up, so as to tear the dome, and the acarus will be brought into view ; we have now nothing further to do than to insert the needle into the open cavity, and the acarus will cling to it firmly. The creature will appear at the tip of the needle like a minute white globe, and with the utmost ease may be transferred to the nail, or to a glass slide, to be examined with the microscope.

But the study of the cuniculus teaches us yet another lesson : the grubbing and boring of the acarus necessarily excite an irritation of the derma at the seat of the operation ; the irritation is manifested by the development of a serous vesicle, sometimes a sero-purulent vesicle, and the cuniculus is lifted upwards away from the derma, and may be seen as a linear streak in the layer of epidermis which constitutes the wall of the vesicle. It is probable that in this way both the cuniculus and the acarus are sometimes destroyed, but at other times the acarus escapes the sudden upheavement, and continues her work beyond the limit of the vesicle. Occasionally the irritation caused by the operations of the acarus excites the formation of a similar vesicle in the immediate neighbourhood of the cuniculus, sometimes several ; and the irritation propagated from cuniculus and vesicle or vesicles, causes others to be produced at a distance, and so, by a propagated irritation, more active in some subjects than in others, the cuniculus becomes associated with vesicles, and the disease scabies is established.

We have now only described the phenomena

attendant upon the presence of a single acarus; but if you will suppose the existence of several of these causes of irritation—and you have only to wait until the progeny of one of the cuniculi is hatched to have ample grounds for such supposition,—you will understand how the irritation caused by the presence of acari in and on the epidermis may produce irritation in the immediate neighbourhood of their haunts, and that the irritation may be propagated to the most distant points of the surface of the body. And, further, that the irritation will be manifested by vesicles, by vesico-pustules, by papulæ, by scratches inflicted in the efforts to relieve the itching of the skin, and by a broken and ragged state of the epidermis.

But hitherto we have taken no notice of the young acari and of the males; the former of these linger in the neighbourhood of the parental haunts, nestling in the cuniculi and in hollows of the broken skin. While the males—fewer in number than the females—are endowed with remarkable activity and energy, and rove over the whole surface of the body in search of the unimpregnated female. Another curious and practical example of the habits of the acari is, that they repose during the day and indulge their activity in the evening and during the night. Hence our presumption that each of the moniliform flutings of the cuniculus is the work of a single night; hence also the exasperation of pruritus in the evening and in bed; and hence, besides, a more important matter, the greater liability of transmission of the disease by bedfellows and during the night.

The diversity of consequences produced by the acarus in different individuals—in other words, the difference in severity of the scabies—is very remarkable: in one person a few papules, in another the most violent torment; in some exciting a leichen pruriginosus, prolonged for several months; in

others a troublesome ekzema; and in others, again, a phlyktænoid eruption, approaching to pemphigus. And these secondary effects may continue after the primary disease has subsided, and when every acarus is destroyed. Nevertheless, we have occasionally met with cases in which the phenomena of secondary scabies have been prolonged for a considerable period, and wherein, after careful search, a single acarus has been discovered, not, as usual, upon the hands, but upon the border of the axilla, or upon some part of the genital apparatus.

The day has gone by since mention used to be made of varieties of scabies; but Willan and Bate-man describe four kinds of the disease, founded on the popular terms, "rank, watery, pocky, and scorbutic;" or, in technical language, scabies "papuliformis, lymphatica, purulenta, and cachectica." At present we abandon all such distinctions, and regard the differences in proportion of papulæ, vesiculæ, and pustulæ, and the graver or slighter forms of eruption, as the mere accident of the constitution of the patient.

Diagnosis of Ekzematous Affections.

The attention which is devoted by dermo-pathologists to diagnosis evinces a wholesome spirit of scientific inquiry, although it may not be actually necessary for the therapeutical management of the disease; and the close and precise discrimination upon which diagnosis is founded is nowhere more important than in the exact determination and differentiation of the ekzematous affections; and this, not only with the view to establish their special pathognomonic characters, but also to lay the foundation of a negative diagnosis in reference to other diseases. The question may sometimes arise, is it ekzema? is it lepra? is it syphilis? And when this difficulty obtrudes in greatest force, it is con-

venient by negative signs to eliminate first one and then another of the doubtful affections, until that which remains stands alone, and establishes thereby its unmistakable identity. We have already called your attention to the multiple characters of ekzema; we have shown that one or other of those signs may be absent without disestablishing the diagnosis of ekzema; we have seen that the most pathognomonic of the characters of ekzema is exudation, whether extrastitial or intrastitial; and we have also shown that the separate existence or isolation of one of the lesions of ekzema—for example, its papulæ or its pustulæ—is recognised as a special affection under the name of leichen or impetigo. And, furthermore, that one or more of the lesions of ekzema due to a particular cause, namely, the presence of an animalcule in the epidermis, is the disease scabies.

In the diagnosis of leichen you will have to bear in mind not only its papular character, but also the absence of other signs indicative of ekzema. You must remember the pathological seat of its papulæ, their sometimes dispersion and sometimes aggregation. Their occasional special relation to the hairs, or to an exuviative epithelial affection of the follicles, and their frequent variety of colour. The eruption, moreover, is sometimes concentric and circumscribed, sometimes centrifugal and annulate; commonly pruriginous; sometimes partaking of the neurotic character of urticaria, or modified by the seat of its manifestation, and also by age. The point of greatest moment in the diagnosis of leichen is one which is as yet not ripe for our consideration, namely, its distinction from other forms of folliculitis, originating in different causes. For example, you are sure to fail in your early attempts to distinguish leichen annulatus from tinea or phytosis annulata; and your failure will not be your own, but attributable to the present state of dermatology. To

this subject we intend to give our full attention at some future and not very distant day.

The diagnosis of impetigo is expressed in a very few words, namely, *a superficial vesicle containing purulent fluid*. Just as the presence of pus in connection with the pathological disorganization of ekzema, whether the pus be simply a product of the morbidly secreting surface, or be developed in the form of minute pustules in the circumferential integument, is the pathognomonic feature of ekzema impetiginodes or ekzema pustulosum; so the presence of superficial pustules or vesico-pustules, apart from any other of the lesions of ekzema, is the characteristic of impetigo. Its occurrence in figured clusters on one or more regions of the body, or its scattered distribution, is self-evident; while its assumption of the vesicular type in a debilitated state of the tissues of the skin is made manifest in impetigo phlyktænodes. Dried pus, again, or the combination of pus with a viscous mucopurulent fluid, gives the yellow, the dried honey colour, to the crusts and scabs of impetigo.

In the diagnosis of scabies, on the other hand, we neither look for vesicles nor pustules as the primary indication of the disease: indeed, both may be absent. Our attention is chiefly drawn to the papulæ, to the marks of scratching apparent on the skin, to the ragged condition of the cuticle in the haunts of the acarus; to the subjective symptoms, the itching at night, the pruritus of the wrists, the prevalence of a similar affection among other members of the family of the patient, and, lastly, the detection of cuniculi.

Cause of Ekzematous Affections.

We have already gone so extensively into the cause of ekzema that little remains to be said with especial reference to leichen and impetigo. Scabies

is especially interesting to us as teaching the kind and the amount of pathological alteration of the tissues of the skin that may be occasioned by a purely local cause ; in demonstrating the activity of propagation of irritation by means of the skin ; and the tenacious continuance of irritation, even when the exciting cause is withdrawn. The causes of leichen are one while *local*, as in the instance of the eruption occasioned by the use of garments made of a rough or heating material, and to some extent in leichen tropicus ; and another while, and more commonly, constitutional, depending, in fact, upon causes which are identical with those of ekzema. Leichen planus would seem to be the combined result of debility of the skin and disorder of the functions of assimilation.

Prognosis of Ekzematous Affections.

Although the ekzematous family includes some of the most severe of the affections of the skin, yet none are especially grave, apparently for the reason that the skin is not a vital organ, and its derangements are not so seriously felt by the economy as those of other organs, the lungs, for example, the liver and kidneys, or the alimentary canal. Ekzematous affections, with the single exception of scabies, originate in debility, in debility of tissue accompanied with more or less of general debility, and derangement of the functions of assimilation and secretion. This complication naturally tends to render ekzematous affections chronic, and often serious ; but, unless attended with excessive pruritus, they exert very little influence upon the constitution, and are to be considered more in the light of indications of a disordered and enfeebled system than as exercising any direct influence upon the life of the patient.

Therapeutical Treatment of the Ekzematous Affections.

Much that has been said with regard to the separate treatment of ekzema will apply equally to that of leichen and impetigo. The indications to be observed are, in the first place, the *constitutional* state of the patient; and, secondly, the *local* condition of the skin. The constitutional state of the patient may present disturbance of the digestive, assimilative, and emunctory functions, or a condition of simple debility; or both these states may be present in unequal proportion. The local condition, on the other hand, may be one of inflammation or mere irritability.

Upon this general principle we may regulate our salines, aperients, and alteratives, on the one hand; and our tonics on the other; and locally, our refrigerants, our sedatives, and our stimulants.

In leichen simplex and leichen tropicus, the two most active forms of the eruption, we shall derive advantage from the use of effervescent salines and saline aperients. Sometimes the state of secretion of the liver may be suggestive of a moderate use of blue pill or grey powder. And we may complete our work with an alkaline or acid tonic, or with citrate of quinine and iron. Our local remedies in these cases are dusting powders, a lotion of aqua calcis with oxide of zinc and calamine powder, a lotion of bicarbonate of ammonia or soda, or one of acetate of lead. If the pruritus be troublesome, an emulsion of bitter almonds with hydrocyanic acid; and if the skin be abraded and irritated by the action of the nails, the benzoated oxide of zinc ointment with spirit of wine, spirit of camphor, or carbolic acid.

Leichen circumscriptus, leichen annulatus, leichen pilaris, and leichen lividus, are all of them chronic forms of eruption, and, besides the necessary means for regulating the digestive, the assimilative, and

emunctory functions, require tonic remedies, possibly arsenic, and the use of tonic or stimulant local remedies, such as the lotion of bitter almonds with perchloride of mercury, a lotion of sulphuret of potash; or zinc, mercurial, or sulphur ointments; the zinc ointment being combined with carbolic acid; the mercurial ointments being those of the white or red precipitate, considerably diluted, and the sulphur ointment that of the sulphuret of potash. One or two applications of tincture of iodine will often disperse local patches of circumscribed or annulate leichen without further treatment.

Leichen pruriginosus, so often a sequel of scabies, may be one of those theoretical cases in which unimpregnated female acari, or solitary males, are alone left upon the skin. It will often yield to the unguentum staphisagriæ, unguentum potassæ sulphuratæ, or to a lotion of the perchloride of mercury in emulsion of bitter almonds.

Leichen planus, besides constitutional treatment to regulate unhealthy function of whatever kind, may require the ferro-arsenical mixture. While, locally, its most important remedies are the bitter almond emulsion with perchloride of mercury (gr. ij. ad ʒj.), the unguentum potassæ sulphuratæ, and the solution of the pentsulphide of calcium or solutio sulphuris cum calce.

Leichen strophulosus and leichen urticatus are both eruptions of infancy, and in both a regulative and tonic treatment are required. A perchloride of mercury solution in emulsion of bitter almonds is best suited for the former, while a lotion of juniper tar with soft soap and alcohol is almost specific for relieving the pruritus of leichen urticatus; and, where the latter fails, the unguentum staphisagriæ is indicated.

In impetigo, besides the restoration of the functions to the healthy standard, tonics are imperatively called for, and especially chalybeates and the citrate

of iron and quinine, and, after the use of these, arsenic will often be found useful. The best local applications are the lotion of lime-water with oxide of zinc and calamine, or the ointment of zinc with carbolic acid (gr. v. ad ʒj.). The latter is especially suited to the phlyktænoid form of the eruption.

Scabies may be cured with a word, and that word is *sulphur*. Rub a little sulphur ointment, made fragrant by the addition of oil of chamomile, thoroughly into the hands night and morning, and wash the rest of the body with sulphur soap, and at the end of a few days the cure is complete, and with a sound skin. Where the use of the sulphur ointment in the morning would be inconvenient, use dry sulphur instead. And, besides the cure, the patient is saved the danger of communicating infection from the first moment of applying the remedy.

The blundering old days of confining a patient to the blankets for a week or more, and excoriating his skin with a twice-daily inunction of sulphur and hellebore, have long since ceased to exist; and modern conundrums are not worth the trouble of a thought. From the palace to the pigsty there is no more perfect, cleanly, and certain method of treatment of scabies than the sulphur cure as adapted to the better class of society. The oil of chamomile not only disguises the smell of the sulphur, but by its own odour is destructive of the *acarus*. And if the smell of the sulphur be really an objection, we have in reserve a valuable application, the unguentum *staphisagriæ* of Bourguignon.

The prejudice against the "sulphur cure" has given rise to a variety of suggestions of other methods that are still *sub judice* and not yet generally accepted. In a few instances we have made use of the *styrax cure*, but we are not yet prepared to venture an opinion with regard to it. The best form of application of this remedy is that proposed by Dr. Schultze, which consists of one ounce of

liquid styrax, two drachms of spirits of wine, and one of olive oil. These substances are to be blended thoroughly together, and the resulting compound is sufficient for two applications. It must be carefully smeared over every part of the skin, with the exception of the head, and repeated in twelve or twenty-four hours. Care must be taken that no part of the skin is allowed to escape; and the liniment must not be disturbed for several days, when a thorough ablution puts an end to the treatment. This liniment is wholly unirritating to the skin, and has no tendency to excite ekzema, as is the case with the sulphur ointment.

Dr. Silas Durkee, of Boston, conceives that much of the therapeutical value of the sulphur applications is due to the solvent action of the alkali, which is usually combined with them; and he proposes, instead of using sulphur at all, to rub soft soap thoroughly into the affected parts of the skin. The soap should be left on the skin until it produces a "severe smarting or tingling sensation," and then washed off with warm water. One application, he says, will frequently suffice for the cure, but sometimes two or three may be required; in which case the saponation should be repeated every third or fourth night. The possible irritant effect of the remedy needs to be watched; it is sometimes very considerable, and for infants and young children an ointment is to be preferred consisting of ten or fifteen grains of the iodide of potassium to the ounce of lard.

There is a curious and barbarous method of treatment of scabies practised in the Belgian army, which is called a speedy cure, and is attributed to the Medical Director-General, Vlemingcx. The detail of the method is amusing, and serves to point a moral and complete a tale. The process is to rub the patient down with soft soap for half an hour; then to wash off the soft soap and no little of the epidermis during another half-hour; in the next place to

scrub him with the solutio sulphuris c. calce for a third half-hour; and, lastly, to wash off the solutio sulphuris c. calce, make him dress, and send him back to his military quarters.

CHAPTER IV.

ESSAYS, NOTES, AND CASES, ILLUSTRATIVE OF EKZEMA.

I.

EKZEMA INFANTILE.*

INFANTS at the breast and young children are peculiarly subject to ekzema, and in them it is apt to assume the severest form presented by cutaneous disease. In young infants it commences at the end of the first month or six weeks,† and unless submitted to proper treatment may continue for months and years—in fact, it may lay the foundation of a cutaneous disease, which may be prolonged in a chronic form until manhood, or may hang about the patient for the remainder of his days.

Ekzema infantile, like ekzema adultorum, originates in malassimilation, and with good reason is commonly ascribed to a faulty secretion of milk on the part of the mother: but when once established, it is not remedied, as might be expected, by the withdrawal of the cause and the substitution of a different and less faulty food. Unsuccessful attempts to cure the disease probably carry the child on to the period of cutting the teeth; then the continu-

* This Essay was read at the annual meeting of the British Medical Association, on the 31st of July, 1856; and must therefore be taken as the expression of the author's opinions fourteen years ago. It is reprinted from the *BRITISH MEDICAL JOURNAL* of the corresponding date.

† *Vide* succeeding Essay No. II. of the present Chapter.

ance of the disease is attributed to dentition—this time without so good reason—and hopes are raised that when the milk-teeth are perfected, the disease will subside. The milk-teeth are all cut, but, still the ekzema lingers, and then a new light of prophecy beams upon the little patient: when puberty arrives, then certainly the disease will go: but puberty possesses as little of the physician's art as change of food, or completed primary dentition: and so the malady becomes perpetuated. I have seen this picture in life so frequently, that I could not refrain from sketching it.

It is remarkable how trivial an exciting cause may become the origin of this distressing malady. A lady, six weeks after her confinement, travelled by the railroad from London to the sea-coast, carrying with her her infant. The mother was chilled by the journey, was feverish during the night; her infant was feverish the following day and threw out an eruption of ekzema; the child was brought to me some months afterwards. Recently, a neighbour brought me her infant covered with ekzema from head to foot. The child was a few months old. In her confinement the mother lost her husband under painful circumstances; the distress caused by this affliction was transmitted to the offspring as an ekzema rubrum. How small is the cause of malassimilation in these cases, which may be taken as the type of the whole family; how easily is the assimilative function of infants disturbed; how difficult is it often to be restored.

When cutaneous eruption attacks an infant under these circumstances, it revels in all the typical and modified forms of cutaneous disease. At the same moment, and on the same child, may be seen erythema, leichen, strophulus, ekzema, impetigo, pityriasis, and psoriasis: and an observant nurse seems to take a special delight in pointing out the various diseases which pervade the flesh of the poor little

sufferer. In certain parts of the body erythema is apt to prevail; but a broken or cracked state of the skin, with however small a degree of ichorous oozing, must determine the case to be ekzema. On the back, leichen is apt to predominate: on the head, in the bends of the joints, and on the pudendum, ekzema: on the cheeks and ears, ekzema impetiginodes; all on the same skin, and in gross defiance of the orders, genera, and species of the Plenckio-Willanean method of classification.*

The predominance of one or other of the typical forms of cutaneous eruption, is determined by the condition and temperament of the infant. The child may present every shade of variation of appearance, from a state difficult to distinguish from complete health, to one in which the little thing is attenuated and shrivelled up, and looks like a wizened old man. In the former extreme, however ruddy and full the child may seem, there is evidence of an existing weakness, in the softness of its muscles; but with that exception, no trace of disorder of constitutional health can be discovered. Next to softness of muscles comes pallor, in a slight degree, then an increasing whiteness of the eye, attributable to progressive anaemia: then follows emaciation; the skin shows signs of wrinkles, becomes dry and discoloured, and ultimately sordid. With these, the outward signs of the disease, malassimilation in fact, there is rarely any disturbance, or but little, of the digestive organs; the child takes its food well, and is not particularly restless or fretful. Sometimes the motions are green, sometimes mingled with an excess of mucus, and sometimes white from suspended biliary secretion: but there is nothing beyond the commonest

* It may be unnecessary to mention that at present these presumed separate affections are regarded as forms of ekzema under the names of—erythematosum, papulosum, vesiculosum, ichorosum, pustulosum, and squamosum.

gastro-intestinal derangement, and that in a very insignificant degree.

The eruption usually commences as a patch or blotch of slightly raised pimples; the patch is itchy, is rubbed, increases in size, becomes more inflamed, the cuticle is lifted up in more or less defined vesicles, which are usually broken by friction; and the surface becomes excoriated, somewhat swollen, and pours out an ichorous secretion, varying, from a mere oozing, to an excess which wets through everything that is applied to it. With the increase of irritation consequent on the excessive secretion and the congestion which gives rise to it, the patch spreads; where the eruption commenced by several blotches, they probably run into one; the ichorous discharge also increases the local disease, by irritating the parts over which it flows. The case up to this time is one of inflammatory ekzema, or *ekzema rubrum*; the state of *ekzema simplex* has hardly existed, and is only to be seen occasionally; but the disease still runs on, its violence increases, and the morbid secretion, from being a transparent and colourless ichor, like water in appearance, becomes slightly opaque (*tinea mucosa*), milky, then yellowish and semi-purulent, and the case is transformed into *ekzema impetiginodes*; or the discharge may take on a still more decidedly purulent character, while small pustules are developed on the red and tumefied skin around the patch, and then the case is one of *impetigo*. Thus the *plus* or *minus* of these pathological conditions is irrespective of the cause or essential nature of the disease; in other words, the disease being the same, it may, according to the temperament or constitution of the child, be an erythema verging upon ekzema; an ekzema rubrum; an ekzema verging on impetigo, or ekzema impetiginodes; or, the pustular element being in excess, it may be an impetigo. Again, as I have before said, whatever the predominating character

may be, whether erythema, leichen, ekzema, or impetigo, there will always be present in a greater or less degree, some or the whole of the other forms sprinkled over the body; a simple erythema here, an erythema with strophulus or leichen there; a few scattered vesicles of ekzema in a third place, or a few congregated psudracious pustules of impetigo in a fourth.

In this description of the general characters of ekzema infantile, I suppose the eruption to be comparatively undisturbed; but that is rarely the case—the great heat, the prickling, the tingling, the intense itching which accompany the disease, render abstinence from rubbing and scratching impossible; hence these have to be added to the causes of aggravation of the local disorder. Again, the burning heat of the skin on the one hand, and exposure to the atmosphere on the other, tend to desiccate the surface very rapidly; the contents of the vesicles, in the simplest form of the affection, dry up into a thin transparent amber-coloured crust. In ekzema rubrum with a more copious discharge, the crust is less transparent and thicker; and in ekzema impetiginodes it is still further increased in thickness, is lighter both in colour and texture, and uneven in surface; while in impetigo, from the desiccated matter being pus, it is thickest of all, and has the appearance of dried honey: this circumstance has given the name of *melitagra* to the latter disease. As may be supposed, the crust presents considerable variety of appearance, according to the prevalence of accidental circumstances in a greater or less degree, such as accumulation of secretion, amount of desiccation, &c. Not unfrequently, as a consequence of pressure or friction, blood is mingled with the discharges, and the crusts become coloured of various hues, from a lightish brown to a positive black. Again, a variety of colour results from the age of the crust—that which has been longest formed being

usually lighter than the rest: and another difference occurs when the original crust is broken, and a new discharge issues from between the severed fragments.

Sometimes this terrible disease attacks the whole body of the child, and the little thing has scarcely a patch of sound skin on its entire surface, being covered from head to foot with erythema, excoriations, and scabs of every variety of size and thickness, giving out an offensive valerianic odour, which has been compared to the urine of cats. But more frequently it is limited to one or more regions of the body; the commonest seat of the eruption being the head and face, the front of the chest, the umbilicus, the pudendal region, and the flexures of the joints. On the head the eruption is complicated by the presence of hair, which entangles the discharges, and the crusts are apt to form, in consequence, of considerable thickness, sometimes including the whole scalp in a thick, rugged, yellowish, and discoloured cap. At other times, when the discharge is less abundant, it dries up into a friable crust, which, broken into small fragments by scratching and rubbing, has been compared to particles of mortar dispersed amongst the hair, and has received the name of *tinea granulata*; many of these particles of crust, being pierced by the hairs, have the appearance of a string of rude beads. Later in the history of the eruption, and when it has become decidedly chronic, when erythema of the scalp with copious furfuraceous desquamation are the leading characters of the disease, it has been termed *tinea furfuracea*; and later still, when, with a slighter degree of erythema, the epidermal exfoliation is mealy, the case is one of *pityriasis capitis*.

When the ears are attacked, they become much swollen, and give forth an excessive quantity of ichorous secretion, which may be seen distilling from the pores of the skin, and standing in drops on the

inflamed and excoriated surface. When the disease fixes on the face, it is also attended with swelling, and often gives the child a bloated and frightful appearance, every feature being distorted; and the deformity is increased by the production of a thick discoloured scab, which forms a mask, sometimes to the entire face. This huge unnatural mask covering the child's face suggested the term *larvalis* given to one of his species of porrigo by Willan; only that, instead of *porrigo larvalis*, it should have been *ekzema larvale*, or *impetigo larvalis*. Again, from occurring at the milk-period of life, this extraordinary crust, whether arising from the desiccated secretions of *ekzema rubrum*, *ekzema impetiginodes*, or *impetigo proper*, has received the name of milk-crust or *crusta lactea*.

The inflammation of the scalp and face is apt to produce, as one of its secondary effects, enlargement and sometimes suppuration of the lymphatic glands; thus, we find the gland situated behind the ear, the occipital, the submental, and cervical lymphatic glands, swollen and painful. And not unfrequently, in a pyogenic diathesis, there are superficial abscesses in the neighbourhood of these glands.

The pudendal region, both in the male and female infant, is, not uncommonly, the seat of the eruption: it being determined to that region, partly by the heat and moisture resulting from its function, and partly by the thinness and delicacy of the skin. For the latter reason, it is commonly met with in the flexures of the elbows and knees, and sometimes in the axillæ. In the flexures of the joints the inflamed skin is apt to crack into fissures of considerable length and depth, and the cracks often bleed, the blood mingling with the excessive ichorous secretion poured out by the denuded skin.

The general character of *ekzema infantile* is to form patches of considerable size, several inches square, and to attack, as I have already explained, a

whole region at once, such as the head, face, &c.; but, in addition to this, and sometimes without these extensive patches, the eruption appears in rounded blotches, from half an inch to two inches in diameter, sprinkled upon the skin in various parts, as upon the trunk, neck, arms, and legs. These patches are identical with the circumscribed patches which are seen upon the skin in leichen agrius, and the eruption has more the character of the latter disease than of ekzema rubrum. The blotches are raised, thickened, papulated, excessively irritable, discharging but a small quantity of ichorous fluid, and covered, when desiccated, with thin squamous laminated crusts.

Ekzema infantile, when left to itself, has no natural tendency to resolution or spontaneous cure. On the contrary, it merges progressively into a chronic form, and undergoes that kind of modification which is common to cutaneous disease when passing from an acute to a chronic stage. By degrees the ichorous discharge diminishes, and the eruption retires to certain situations, where it continues to linger, sometimes subsiding into a state of calm, and sometimes breaking out afresh like a slumbering volcano. The situations on which it most commonly retreats, are the scalp, the eyelids, the ears, particularly the back of the ears, the integument around the mouth, the armpits, the groins, and the bend of the elbows, wrists, knees, ankles. The parts of the skin over which it has passed are arid and parched; and the fountains of moisture, the natural secretions of the skin, the perspiratory and sebaceous secretions, are dried up. On the scalp, the dried and parched skin, continually throwing off a furfuraceous desquamation, presents the common characters of *pityriasis capitis*, and not only is the skin left in a state of parched exhaustion, but the hair also is dried up and scanty in quantity, and its growth is arrested.

The dry, parched, hot, fevered, state of the skin,

which is the common sequel of ekzema infantile, is a sign of the disorganization and extreme disturbance of function, which the skin has undergone. Even where there was no eruption, the cuticle is rugged, and constantly thrown off as a mealy exfoliation; but where the eruption existed, as around the eyelids, upon the ears, around the mouth, and in the bend of the joints, the skin is more or less red, thickened, uneven, cracked, and chapped, and the ichorous secretion having ceased, it throws off perpetually scales of dried cuticle of various size, some being mealy, others furfuraceous, and others as large as the finger-nail. This, then, is a case of genuine psoriasis; ekzema infantile has therefore become, as the mere result of continuance, chronic ekzema infantile, or, in other words, *psoriasis infantilis*.

This process of constant exfoliation is necessarily attended with pruritus, which is often very considerable; the inflamed part is then rubbed and scratched, and from time to time the ichorous secretion is reproduced.

I have noted that in the early outbreak of the eruption, the only trace of deteriorated condition that may be present in the child, is a feeling of softness of the muscles, and a slight degree of paleness of the skin and of the conjunctiva: in fact, the discernment of these trivial but nevertheless significant signs is a matter of observation and tact; later, however, in the progress of the disease, these signs become sufficiently obvious to attract the attention of the unobservant; and, later still, the poor little child is strangely altered from its normal state; malassimilation, *kakochymia*, are traced in conspicuous lines on every part of the surface, in every feature. The limbs are thin, showing out the prominence of the joints, the muscles are soft and flabby, the skin is soft and pasty, or discoloured and shrivelled: there is an expression of care, anxiety, of thought, upon the little face; from the general

emaciation of the body, the head looks larger than natural; as I before observed, one is struck by the senile look of the child: the mucous membrane of the conjunctiva and mouth is pale, and above all is the strangely white, pearly, anæmic eye, sometimes dull and listless, and sometimes bright and clear. The eye tells an eloquent tale of defective nutrition.

I have remarked, that the symptoms of internal disorder are but trifling at the commencement of the disease, and far from being severe during its course; they attract little of the attention of the mother of the child, or of the medical man. The great, the urgent symptom of the whole, is the teasing, the intense, the violent itching; sometimes the itching is constant with frequent exacerbations, sometimes there are intervals of repose, which are apt to be disturbed by any change of temperature, and then a violent attack of pruritus recommences; but the crowning suffering of all occurs at night; the child is often frantic with itching, it scratches with all its force, digging its little nails into the flesh, while the blood and ichor run down in streams. At last, worn out with suffering and exhaustion the child sleeps, probably to be awakened again several times in the night, by the repetition of a similar agony. This constant suffering naturally wears away the child's powers, and, added to the malassimilation, brings about that state of atrophy which I have previously described. But it is nevertheless remarkable how little the strength and spirits of the child are affected by these desperate paroxysms of suffering. In the morning, after a night of distress, the little thing is fresh and lively, eager for its food, and ready for the battle of the day; while the nurse or mother is languid and powerless from watching and anxiety.

Not unfrequently in ekzema infantile, the mucous membrane of the mouth and nose, of the air-tubes and lungs, and of the alimentary canal, participates in the disease, and is either affected simultaneously

with the skin, or takes a vicarious part. The affection of the alimentary canal gives rise to diarrhœa, and the production of mucus in large quantities, and sometimes of coagulated lymph. The affection of the mucous membrane of the mouth and nose is shown by redness, sometimes aphthæ and augmented secretion; and the ekzematous congestion of the mucous membrane of the air-tubes produces bronchitis in various degrees, accompanied with hoarseness from thickening of the mucous lining of the larynx, and an excessive accumulation of phlegm throughout the lungs. This latter symptom is one which is calculated to give us some anxiety, and requires dexterous management; but it is less severe than common bronchitis, and is often as sudden in getting well, as in its attack. When the mucous membrane of the mouth and air-passages is affected, hoarseness is a conspicuous and striking feature of the complaint; the hoarse cry is unmistakeable, and is sometimes the first and only sign of the congestion of the mucous membrane. It is a sign as diagnostic of congestion of the respiratory mucous membrane, as is whiteness of the eye of general anæmia.

In the treatment of ekzema infantile, the three great principles which I have on every occasion advocated as the *law of treatment* of cutaneous disease, namely, *elimination, restoration of power, and alleviation of local distress*, are to be put in force, but with a change in their order. Elimination must always go first: but in ekzema infantile, I would place alleviation of local distress second; and restoration of power third. Thus the principles of treatment, the indications for treatment being settled, let us consider the means.

For *elimination*, the remedy is calomel or grey powder: I prefer the former; one grain of calomel rubbed down with one grain of white sugar, or sugar of milk, is the dose for the youngest infant;

for a child a year old, a grain and a half; for a child two years old, two grains. Of course this dose is modified according to the apparent strength of the child in the first instance, and in accordance with the action of the medicine in the second; the object to be attained being such a dose as will produce an efficient relief to the alimentary canal, and moreover such an amount of relief as shall act as a diversion to the morbid secreting action taking place in the skin—in other words, as shall divert the morbid secretions of the skin into their more natural and proper channel, the alimentary canal. For this purpose, calomel excels every other medicine; from its small bulk it is convenient for exhibition, merely requiring to be dropped into the child's mouth. It stimulates the liver to an increased flow of bile, and in children it always acts most kindly on the alimentary canal. Again, a free action of the alimentary canal being secured, all probability of *retrocession* of the eruption by the remedies required for the second indication is at an end, and the mother's and the nurse's alarms lest the disease should be *driven in* are set at rest. A free clearance of the stomach and bowels is therefore a primary, a necessary step, at the very commencement of the treatment. After the first dose, the calomel may be repeated according to circumstances; once a week, twice a week, every other night for a few times, even every night for two or three nights if it be absolutely necessary. In my own practice, I usually find once a week sufficient; and I am guided to the repetition of the dose by the state of the little patient. If there be any feverishness, fractiousness, irritability of temper, any increase of pruritus, inaction of the bowels, morbid secretion of the bowels, or threatened congestion of the mucous membrane of the air-tubes, then the calomel powder is to be administered at once without hesitation and without delay. The mother or nurse

soon learns the moment for a powder, and, whatever prejudices they may have to the name of calomel, they are always ready to resort to it after they have once seen its action in this disease. As I have already said, I have no objection to the mercury with chalk, beyond the fact of its being more bulky and less agreeable to swallow, while it certainly possesses no recommendation which can render it superior to calomel. Sometimes I find one or two grains of nitrate of potash a useful addition to the calomel and sugar.*

Having disposed of the first indication, and cleared out of the system any acrid matters that might be rebellious and capable of exciting irritation and feverishness; having moreover unloaded the blood-vessels of some of their watery and solvent elements by the same remedy; we may now have recourse to our means of *alleviating the local distress*, in other words, of soothing and healing the eruption, subduing the pruritus, and arresting the morbid discharge. We can do all this by the benzoated ointment of oxide of zinc† rubbed down with spirits of wine in the proportion of a drachm to the ounce. This ointment should be applied abundantly, and gently distributed upon the surface, until every part of the eruption has a complete coating. The ointment should be applied morning and night, and if accidentally rubbed off, or used upon parts exposed to the air and friction, it may be repeated more frequently. When once applied,

* It will be seen in the chapter on Ekzema, and also in the succeeding paper on Ekzema Infantile, that my views as to the necessity for elimination are considerably modified since the publication of these opinions; and that at present I very constantly commence the restorative treatment without any preliminary eliminatory preparation.

† For the formula for preparing this ointment, see the PHARMACEUTICAL JOURNAL, No. 5, for November, 1854, since admitted into the British Pharmacopœia.

the ointment should be considered as a permanent dressing to the inflamed skin, and never removed until the skin is healed, unless special conditions arise which render such process necessary. To ensure undisturbed possession to the ointment, a piece of linen rag should be laid over it and maintained in position in any convenient manner. Thus, when the eruption covers more or less of the entire body, I have a little shirt made of old linen, with sleeves for the arms and legs, and with means of being fastened closely round the legs, and, if necessary, closed over the hands and feet. This little dress is to be worn constantly, night and day, and for a week together, if necessary. It is intended as a mere envelope or dressing to the inflamed and irritated skin; and its saturation with ointment, which necessarily ensues, only contributes to its greater utility in that capacity. Where the eruption is chiefly confined to the arms or legs, linen sleeves will be sufficient for the purpose. On the face, no other covering than the ointment is necessary, but the latter should therefore be used the more largely.

Where the oxide of zinc ointment is employed in the manner now described, the formation of crusts on the eruption is prevented, in consequence of the exclusion of the atmosphere and the consequent absence of the medium of desiccation. And when crusts are already formed, the object to be attained is to soften the crusts by saturating them thoroughly with the ointment, and then by gentle friction to displace them and substitute a thin stratum of the ointment in their place. When the eruption passes from the acute into the chronic state, and the process of exfoliation of the cuticle is active, gentle friction of the skin with the ointment is even more desirable than in the acute stage of the disease, and at the same time very grateful to the little patient. On the scalp the ointment should

be applied in the direction of the hair, to avoid matting; and as soon as the oozing of ichorous discharge has somewhat subsided, the hair should be gently brushed. I am rigorous in enforcing the non-disturbance of the ointment; but sometimes my *aides* carry their instructions beyond the proper point, and accumulate the ointment too thickly over a given part, retaining thereby the secretions, and interfering with the cure. In this case, if the finger be pressed upon such an accumulated plate of the ointment, the morbid fluids will be seen to ooze up between its chinks or around its edges, and the source of evil is detected. When such an occurrence takes place, the whole of the ointment should be carefully washed off the part with the yolk of egg, and, after drying the skin, fresh ointment should be applied. This excessive accumulation of the ointment takes place the most frequently on the scalp, and is encouraged by the matting of the hair: a reason for keeping the hair brushed whenever the nature of the eruption permits.

Another of my instructions is, to avoid washing the inflamed skin; it may be wiped with a soft napkin to remove exudations or secretions; but washing is unnecessary, indeed injurious, as tending to irritate the skin, and to increase the pruritus and inflammation afterwards. While the washing lasts and the irritated skin is softened by the water, the part is relieved and comforted, but the drying which follows, more than avenges the temporary solace of the ablution. On the same principle, I never order or recommend lotions in this eruption.

In cases of *chronic ekzema infantile*, that is, pityriasis capitis and psoriasis partium aliarum, the stimulant properties of the nitric oxide and nitrate of mercury ointments may be brought into operation. The former is specific for pityriasis capitis, in the proportion of one part to three of lard; and the latter, variously diluted, from one part in eight

to equal parts, may be used for the chronic ekzema or psoriasis of other parts, particularly of the eyelids. But even in the chronic state of the disease, the benzoated ointment of oxide of zinc will be found to be an invaluable and indispensable remedy. In the parched state of the skin left by the chronic disease, glycerine may be found of use, as an emollient; but when any inflammation exists, it generally proves irritant, as compared with the zinc ointment.

We now come to the remaining indication in the treatment of ekzema infantile, namely *restoration of power*; in other words, to correct malassimilation and restore the system to its normal and healthy condition. For this purpose, the great remedy is that admirable alterative tonic, *arsenic*. It is remarkable how well infants of the earliest age bear this medicine, and how rapidly in them it exerts its tonic and assimilative effects. As an effective harmless tonic, arsenic stands alone and without its peer in this vexatious disease. Indeed, in ekzema infantile it is specific; it cures rapidly, perfectly, unfailingly. It would be difficult to say as much for any other medicine in relation to any other disease; and I pronounce this eulogium on arsenic after a large experience. The preparation of arsenic which I select is Fowler's solution, the dose two minims to an infant from a month to a year old, repeated three times in the day, with or directly after meals; and as malassimilation is always attended with anæmia in a greater or less degree, I conjoin with the two minims of Fowler's solution fifteen of vinum ferri; my formula being as follows:—

R Vini ferri, ℥iiss; syrupi tolutani, ℥iij; liquoris arsenicalis, ℥j; aquæ anethi, ℥ij. M. Fiat mistura.

The dose of this medicine is one drachm, with or directly after meals, three times a day.

With these three remedies, namely, the calomel powder when requisite, the benzoated oxide of zinc ointment, and the ferro-arsenical mixture, representing as they do the three indications for treatment of ekzema infantile, I regard the cure as certain and rapid, and failure impossible; and if success were not complete, I should seek for the cause, not in the remedies, but in the mode of administering them. So confident am I of success, that I have often undertaken the treatment of this disease, without seeing the patient, and at hundreds of miles' distance; being satisfied for my only *aide*, with the vigilance of an intelligent mother or nurse. I have never known any evil effects, present or future, result from this treatment; but I never fail to give strict injunctions that *if the medicine appear to disagree with the child it should be given less frequently*, say twice instead of three times a day, or *suspended instantly* if the child appear ill; moreover, that, in the event of such an occurrence, the calomel powder should be immediately resorted to. The period of continuance of the remedies must be left to the judgment of the medical man: the treatment sometimes occupies three weeks and sometimes more; and if a recurrence of the eruption should take place, the treatment must be recommenced, and conducted on the same principle and with the like precautions.

The *diet* of the child, while under this treatment, must be carefully inquired into: it should be good, wholesome, and nutritious. The leading constitutional indication is to nourish properly, and this idea should be carried out in the food as well as in the medicine. I find the juice of meat of great value in these cases, and it may be given either alone as beef or mutton tea, or mixed with the other food.

The consideration of diet and food brings me to an important dietetic medicine, which is of great value in this disease, when the latter is attended

with emaciation, and in the chronic stage; in acute cases it is less applicable; I mean the *cod-liver oil*. The child will often take the oil greedily in its natural state, and its good effects on nutrition are speedily made apparent; it may be given with safety to the youngest infant. In children somewhat older, and particularly in chronic cases, the cod-liver oil chocolate becomes a useful ingredient of diet.

When I have wished to avail myself of the excellent properties of the cod-liver oil in conjunction with arsenic, I have often found the following formula a convenient vehicle for its use—

R Olei morrhuæ, ʒij; vitelli ovi, j; liquoris arsenicalis, ℥lxiv; syrupi simplicis, ʒij; aquæ fontanæ, q. s. ad ʒiv. M. Fiat mistura.

The dose is a drachm three times a day, with or directly after meals.

Where ekzema infantile is complicated with diarrhœa or congestion of the mucous membrane of the air-tubes or lungs, the arsenical remedy should be instantly suspended, the calomel powder immediately administered, and the ordinary antiphlogistic remedies adopted, magnesia and aromatic confection for diarrhœa; and ipecacuhana for the bronchitic or pulmonary congestion. Where the air-tubes are loaded with phlegm, an emetic is useful; and a poultice to the chest and abdomen will be found a useful auxiliary.

In concluding my observations on ekzema infantile and its treatment, I must repeat that I know of no cases in the whole catalogue of disorders of the human frame, in which the disease itself is more unpromising in appearance and distressing in its effects, and at the same time more amenable and tractable under the treatment now laid down, than is this disease.

II.

STATISTICS OF EKZEMA INFANTILE.

IN our review of the work of Dr. Silas Durkee, entitled "Contributions to Dermatology," our attention was attracted by two paragraphs having reference to ekzema infantile. The paragraphs are as follows:—"It generally makes its first appearance in the young subject at about the fifth or sixth month, that is, the period of the first dentition; sometimes much earlier." "In a majority of cases of infantile ekzema the disease is traceable to hereditary predisposition." These statements accorded so little with our own experience of the disease in England that we were induced to have recourse to our case-book; the only one which we happened to have at hand was that of 1868, and we proceeded to examine the cases of ekzema which had fallen under our care during that year, with the view of selecting from them the cases of infantile ekzema, and putting the latter to the test of numerical investigation.

Our total number of new cases of ekzema in 1868 was 535, and of this number 34 were examples of ekzema infantile. These figures will yield a percentage to cases of all kinds of thirty-three per cent. for ekzema in general, and of a little over one and a half per cent. for ekzema infantile alone; while the relative proportions of ekzema infantile to ekzema in general will be about one in sixteen.

Turning now to the thirty-four cases of ekzema infantile, we find the proportion of *males* to *females* to be 22 of the former to 12 of the latter. This difference, that is to say, nearly twice as many males as females, we look upon as accidental, since we cannot conceive the existence of anything in the

organization of the sexes at that early age which could predispose one sex to ekzematous disease more than the other. It will require further research to establish this point.

Our attention, in the next place, was devoted to the age of the patients at the time of the outbreak of the disease. This period we found to range between eighteen days and fifteen months. In the greatest number, namely 9 (including one of eleven weeks), the eruption occurred at the third month; the next greatest number, namely 7, was met with at the second month; the number 4 representing the sixth month. Or we may put it thus:—during the first three months, inclusive, the number was 21; during the second three months, inclusive, the number was 7; during the next six months, inclusive, the number was 4, leaving out 2 occurring at the fifteenth month. Or, again:—during the first six months, inclusive, the figures were 28, and for the whole of the remainder only 6. This, we apprehend, must dispose of Dr. Durkee's first statement, certainly as far as England is concerned, and among the wealthier classes; it will remain therefore to be shown in what manner, if at all, the United States of America differ in this respect from England.

The *duration* of the eruption at the time of consultation varied from two weeks to four years and a half; thus, between two weeks and one month there were 3 cases; between one month and three months, 8; between three months and six months, 9; and between six months and four years and a half, 14. It is not to be presumed, however, that the patients were neglected during this interval, our register simply recording the period of existence of the disease at the time of application to ourselves. The instance of consultation at two weeks was an illustration of the fable of the "burnt child" (Case 25); the mother had had an infant who had suffered from this disease previously, and knew and dreaded its

consequences. These periods also mark another fact, namely, the tendency which exists on the part of ekzema to become chronic if left without treatment, or if treated improperly, or left to the chance of the *vis medicatrix nature*. And the cases are suggestive of another phenomenon, bearing upon the migratory changes accomplished by time on the course of the disease. Thus, in Case 12, the early attack of the eruption at six months made its appearance on the face, whereas, at the time of consultation the seat of the disease was the lower extremities.

The occupation of the head by the eruption in ekzema infantile is one of the most constant of its phenomena, and the cases before us illustrate that fact very conclusively; thus, of twenty-four cases of which the *seat* of the eruption is named, 21 occupied the head and 2 only the extremities, one of the latter being also associated with eruption on the neck. The part of the head most frequently attacked was the scalp, of which the examples were 13; affection of the face occurred in 12 cases. The scalp was alone affected in 6 cases, the face alone in 4; the combinations being as follows:—scalp and face, 4; scalp and trunk, 2; scalp, face, and trunk, 1; face and scalp, 4; face and trunk, 4; and extremities and neck, 1. Moreover, the part of the trunk the most frequently invaded was the chest and shoulders. At a later period, and in subsequent attacks or recurrences of the disease, a tendency to migration is observed, as in Case 12, wherein the primary outbreak occupied the face, and the latest the lower extremities. So also in children of a more advanced age, and in adults who have suffered from ekzema infantile, it is very usual to find the disease limited to the joints (ekzema articulorum); to the lips (ekzema labiorum), or to some local and circumscribed site.

The *forms* of ekzema met with in the infant are generally four, namely: erythematous, ichorous,

pustulous, and papulous; although a single form is very rarely found alone; and when we speak of an ekzema erythematosum or ekzema ichorosum we intend to signify only an eruption in which the erythema or the ichorous exudation is the predominant character, and the same with reference to ekzema pustulosum and ekzema papulosum. With this reservation, we find in the cases before us ekzema erythematosum appearing 14 times; ekzema ichorosum, 10; ekzema pustulosum, 7; and papulosum only thrice, although the latter is very commonly intermingled with ekzema erythematosum, and not unfrequently shows itself in association with the ekzema erythematosum which surrounds the other forms.

As a *complication* of ekzema infantile, furunculi are by no means uncommon, and a close association exists between furunculosis and ekzematosis. In the small number of thirty-four cases, four examples of boils must be admitted to be a very considerable proportion. In one instance the boils may be regarded as hereditary, the mother being subject to them, and suffering from an attack while suckling her child. In two of the remaining cases the mother is mentioned as being of delicate and weakly health. The other complications met with in our thirty-four cases are four in number, making the total of complications eight. In one of the cases there existed superficial abscesses; in another, in addition to the ekzema, pneumonia, cerebral irritability, and leukæmia; in a third there was diarrhœa; while in the fourth there was local inflammation with abscess excited by vaccination. With ekzema capillitii, enlarged sub-occipital and auricular glands are one of the most frequent phenomena. Occasionally the cervical glands are affected; and sometimes hypertrophy of the lymphatic glands is associated with subcutaneous abscess.

If we inquire into the *cause* of ekzema in the cases before us, we meet with five which are predominant

in their influence: the first of these is *food*, insufficient or improper; the second, *temperature*; the third, *diathesis*; the fourth, irritation set up in the organism by *dentition*; and the fifth, the irritation of *vaccination*. The numbers that we set down to four of these causes, taken separately, are:—food, 19; diathesis, 6; dentition, 5; and vaccination, 3. But as, from their nature, the causes are sometimes associated, we find food in conjunction with diathesis amounting to 6; and food in conjunction with vaccination to 1; making a total of 26 in which food plays a primary part.

If we look at the ages of the patients in conjunction with the causes, we may assume that during the first six months of life the causes may very fairly be divided between food, temperature, diathesis, and vaccination; while dentition is very unlikely to come into operation until six months are completed. And if we look at the figures in illustration of this view, we shall have the number of patients aged six months and under amounting to 28, and above six months to 6 only; that is to say, to one more than we assign expressly to dentition.

Then, as to the causes themselves, diathesis is solely a predisposing cause; food, again, is a predisposing cause, but, in a less degree, an exciting cause; so also is temperature; dentition is both predisposing and exciting; while vaccination is chiefly an exciting cause. Thus, we may range on the side of predisposing causes, diathesis, food, and temperature; and on the side of exciting causes, dentition and vaccination.

We will endeavour to illustrate these points by reference to the cases before us; for example, taking, in the first instance, food:—in Case 3, the mother's milk failed when the infant was a fortnight old, in consequence of a shock. Again, Case 14, the infant, seven weeks old, was taken during very cold weather a long railway journey, and there can be no

doubt that the mother's milk suffered in consequence, for the eruption broke out a few days later. In Case 9, again, there was considerable disorder of the alimentary canal, at first constipation, and subsequently diarrhœa, for which the infant's food must be held responsible. In another case, of ekzema capitis, that came recently under our notice, the mother suckled her child regularly, but the infant fell away in health, and then it was discovered that the mother possessed a totally inefficient supply of milk. Then, in cases 6, 7, 5, and 21, the natural food having failed, the infant was brought up by hand, always a hazardous experiment, from the age of three weeks, two months, and three months respectively.

The influence of *temperature*, and especially cold, in the production of ekzema is shown in the more frequent outbreak of the eruption in the colder months of the year than in the warmer months. Thus, of the 34 cases under consideration, 11 appeared in December, and 4 in January; and, taking the whole number, 20 occurred in the colder months of the year, and 14 in the warmer months. This point, like others, is suggestive of interesting considerations, but demands further research and investigation.

The mere presence of an attack of ekzema in an individual is not in itself sufficient to set up a diathesis in the offspring. Ekzema is almost as universal as dyspepsia, and, like dyspepsia, may be purely accidental; while both may be so far engrafted upon the constitution as to be susceptible of transmission by hereditary descent to the children. We recognize, therefore, diathesis and hereditary transmission, but simply look upon them as an occasional cause of the disease. Cases 2, 8, 25, and 28 are examples of hereditary diathesis, as is shown, not by the presence of ekzema in the mother, although that sometimes occurs, but by the previous mani-

festation of ekzema in others of the children of the same parent. In Case 8, four children out of nine had suffered from the same affection, and in the two other cases a previous child had also suffered. In this particular there is no exact regularity, and it is difficult to say why one or two children out of a family should be attacked, or why one or two or more children should be passed over. In Case 25 the child's wet-nurse lost her milk; another wet-nurse, a remarkably healthy woman, was procured, and a week afterwards the infant was attacked. The new milk was better than that which preceded it; it deranged the functions of digestion; the balance between the recipient and the thing received was disturbed, and the new and better milk virtually acted the part of an exciting cause of ekzema, showing how food may be an excitant as well as a predisponent.

It has always been our aim to prove that the essence of ekzema is debility. Debility may be propagated, and such debility may become a diathesis favouring the occurrence of ekzema. The association of furunculosis with ekzema, and axillary abscess with ekzema, is a well-established fact; and all these points are illustrated in the cases before us. Cases 8 and 24 are both of them examples of a delicate and weakly parent. Cases 19, 24, and 27 combine furunculi with ekzema; in Case 19 the mother was subject to frequent attacks of boils; one of these attacks occurred when her infant was four months old, and subsequently to this occurrence boils broke out upon the child's skin. In Case 26 the mother was suffering from abscesses in both axillæ at the time of the eruption of ekzema in her child.

Vaccination we have always regarded as an exciting cause, requiring for the production of the morbid phenomena which sometimes accompany and follow it, a morbidly susceptible state of the organism, that

is to say, a diathesis; and the diathesis may be the consequence either of inherited or of acquired debility. Cases 1, 20, and 32 are examples of ekzema immediately following vaccination, and excited, as we believe, by the constitutional irritation set up by the vaccine fever. In Case 32 the influence of perverted food was superadded to the vaccination; for example, the arm became inflamed, abscesses formed, and at the fourth month the infant was weaned from the breast and brought up by hand. At the fifth month ekzema burst forth upon the face. Case 2 is an instance of diathetic and hereditary ekzema, aggravated by vaccination, and still further aggravated by alteration of food. The eruption appeared at the eleventh week, the child was vaccinated at the twelfth, and was weaned at the fourteenth week.

The term, "milk-rash," or more correctly, "milk-crust" or *crusta lactea*, bears witness to the relationship between food and ekzema; while the terms "red gum" and "tooth rash" point to dentition as a cause of the disease—a cause which, in our opinion, has been too exclusively recognized and adopted. Irritation from cutting the teeth ought not to come into existence until the sixth month is completed; and yet, as we have just seen, twenty-eight out of thirty-four cases of ekzema infantile occur within the limit of six months, and only six beyond it. And out of the entire number we find only five that we can legitimately ascribe to dentition:—these five cases being Nos. 11, 13, 16, 30, 33. The age of outbreak of the eruption in these cases was seven months in one instance, eight months in two, nine months in one, and fifteen months in the remaining one. In Case 33 the child had four attacks of the eruption, each being associated with the cutting of teeth. And we remember a mother one day saying to us that her child always cut its teeth with a rash, just as we know in

some instances the cutting of teeth is accompanied with a fit of convulsions.

Cold, besides being a constitutional cause, may also be local or traumatic. We have no illustration of its local effects in our present group of cases; but in Case 19 we see an example of a traumatic cause operating upon a pre-existing diathesis. The child's mother had never experienced ekzema, but she was subject to a congeneric affection, namely, furunculosis; the child inherited the furuncular diathesis; it was then vaccinated; next followed a catarrh; for the catarrh the mother rubbed some camphor liniment into the child's cheeks; and upon the stimulus of the liniment, a traumatic irritant, the ekzema sprung into existence.

We will now turn our attention to the *treatment* of these thirty-four cases, simply premising that as food and temperature stand at the head of the efficient causes of the disease, they must receive our first consideration. And, this being done, we shall proceed to enumerate the constituents of the Pharmacopœia employed, in the order of frequency of use of the various remedies. These latter were as follows:—*Internally*. 1. Liquor arsenicalis with steel wine, in the formula known as our ferro-arsenical mixture; 2. mixture of magnesia, rhubarb, syrup of tolu, and dill-water; 3. calomel and sugar, one grain each; 4. cod-liver oil; 5. syrup of the phosphate of iron; while *externally*, we prescribed—6. benzoated ointment of zinc, sometimes alone, and sometimes with spirits of wine, spirits of camphor, or carbolic acid; 7. powder of oxide of zinc, starch, and camphor; 8. red precipitate ointment, diluted; 9. white precipitate ointment, diluted; 10. citrine ointment, diluted; 11. tar lotion; 12. lotio plumbi; and 13. lotio boracis cum oleo.

In 30 out of the 34 cases the ferro-arsenical mixture was prescribed; for 22 cases in two-minim doses; 6 cases, one minim; and in 2 cases, three

minims; all three times a day, with meals. In 18 of the 22 cases it was ordered at the first visit, and consequently without any preparation of the patient; in three cases it was commenced at the second, and in one case at the third visit. In two cases only was it necessary to suspend the arsenic, and then merely because it interfered with the appetite of the patient. The mixture of magnesia, rhubarb, and dill-water was prescribed in 8 cases; 5 at the first visit, 2 at the second, 1 at the third. Cod-liver oil in emulsion with yolk of egg and dill-water, was ordered in 6 cases; 5 at the first, and 1 at the fourth visit. The syrup of the phosphate of iron was ordered once; and the calomel powder in 6 cases, once only at the first visit, twice at the second, twice at the third, and once at the sixth.

The benzoated oxide of zinc ointment was prescribed in all the cases but one; the powder of zinc with camphor, diluted with starch, eleven times; the diluted red precipitate ointment in cases of ekzema capillitii, six times; the diluted white precipitate ointment, four times; and the diluted citrine ointment, once, for ekzema palpebrarum. The lotio picis, lotio plumbi, and lotio boracis cum oleo, were ordered for the relief of pruritus, the first-named twice; the others once.

With one exception (Case 18) all the cases recovered; but the duration of treatment is a matter difficult to determine in consulting practice. The only numerical evidence that we can offer is, that 14 cases we saw only once; 11 cases, twice; 3 cases, three times; 3 cases, four times; and 1, six times. In some instances these visits were at the week's end; in others, two, three, or four weeks. If the case went on satisfactorily, the child was not brought back; and the treatment was continued by the parent, sometimes solely, sometimes under the observation of the family medical attendant. If any

adverse change had occurred, there can be no doubt that the patient would have been brought again. In some instances the amendment and cure were remarkable for rapidity; now and then a single dressing with the zinc ointment would almost remove the eruption; under favourable circumstances a cure might be expected in three weeks, while at other times it was prolonged to as many months. All precautions taken, we should say of ekzema infantile that its cure is both certain and brief, and without any drawback.

SUMMARY.—We may simplify our observations by putting the chief points into an aphoristic form, and appending to this summary, by way of conclusion, an abstract of the cases on which our statements are based.

1. The percentage of ekzema to other cutaneous diseases is 33 per cent.

The percentage of ekzema infantile to other cutaneous diseases is $1\frac{1}{2}$ per cent.

The percentage of ekzema infantile to ekzema of the rest of life is as 1 to 16.

2. That ekzema infantile is more frequent in the male than in the female.

3. That the most frequent period of the eruption of ekzema infantile is that between the second and third month inclusive.

4. That ekzema infantile left to the chances of the *vis medicatrix naturæ* is apt to become chronic, and identified with the system.

5. That early treatment of ekzema infantile is of the utmost importance.

6. That ekzema infantile generally occurs in the head and face; and more frequently in the former than in the latter.

7. That the neck and upper part of the trunk is more frequently attacked than the lower part of the trunk and the limbs.

8. That in successive attacks and in chronic

ekzema the flexures of the joints and the extremities are more apt to suffer than the face and head.

9. That the forms of ekzema infantile are four in number, and occur, in frequency, in the following order:—erythematous, ichorous, pustulous, papulous; ekzema erythematosum being twice as frequent as ekzema pustulosum.

10. That ekzema papulosum, the most rare in its occurrence alone, is commonly associated with the other forms.

11. That furunculosis is a common complication of ekzematosus.

12. That enlarged occipital and auricular lymphatic glands are commonly associated with ekzema of the scalp.

13. That superficial cutaneous abscesses are not unfrequently associated with ekzema in cachectic children.

14. That the predominant causes of ekzema are five in number, and hold the following relation to each other in point of importance; namely, food, temperature, diathesis, dentition, vaccination.

15. The most common predisposing cause of ekzema infantile is deficient or improper food.

16. Cold is an occasional cause of ekzema infantile; sometimes predisposing, but more frequently exciting.

17. Ekzema infantile is most frequent in December and in the colder months of the year.

18. Hereditary diathesis is an occasional predisposing cause of ekzema infantile.

19. Dentition is a common exciting cause of ekzema infantile; sometimes a predisposing cause.

20. Vaccination is an occasional exciting cause of ekzema infantile; but is less influential than food, cold, diathesis, and dentition.

21. Local or traumatic causes may be exciters of

ekzema, but are inoperative unless they be preceded by a predisposing cause.

22. Debility is the proximate cause of ekzema.

23. The treatment of ekzema infantile calls for the most careful observation to discover a diet congenial to the patient.

24. The combination of iron and arsenic, with attention to the secretions, if necessary, and the local use of the benzoated ointment of zinc, and a diluted zinc powder with starch, is an efficient method of cure, if not the very best that is known.

ABSTRACT OF CASES:—

1. Male child, *æt.* 13 months; ekzema frontis; began when five months old; followed vaccination; the eruption almost entirely confined to forehead.

2. Male child, *æt.* 5 months; ekzema began at $2\frac{3}{4}$ months; vaccinated at 3 months; eruption increased after vaccination; weaned at $3\frac{1}{2}$ months, in consequence of insufficiency of mother's milk. Two out of six children have suffered from ekzema; the parents have never had any eruptive complaint.

3. Male child, *æt.* 4 months; ekzema capitis; began on the 18th day. The mother received a shock when the infant was two weeks old, and her milk failed.

4. Female child, *æt.* $7\frac{1}{2}$ months; ekzema began at the end of the second month.

5. A female child, *æt.* 15 months; has ekzema pustulosum of the neck, arms, legs, and bends of the knees; the eruption began when she was two months old; since the age of three months she has been brought up by hand; she has not been vaccinated.

6. A male child, *æt.* 6 months; ekzema of the head and face; began at three months; brought up by hand from the age of three weeks.

7. Male child, *æt.* 4 months; has ekzema of the cheeks, shoulders, and chest; began at three months; the child was brought up by hand from two months.

8. Male child, *æt.* 3 months; had two or three boils during the first fortnight; ekzema papulosum of the face and chest at the sixth week. He is the ninth child; four out of the nine had ekzema in infancy; the mother is out of health.

9. Male child, *æt.* 17 months; ekzema pustulosum, face and shoulders, two months; the eruption was preceded by constipation; during the last fortnight the bowels have acted three times daily.

10. Male child, æt. 7 months; ekzema commenced at the age of two months.

11. Female child, æt. $2\frac{1}{2}$ years; has had ekzema since the age of eight months, with occasional attacks of congestion of the lungs; she is anæmic, and has a large head.

12. Male child, æt. 4 years; has ekzema on the legs; the eruption made its first appearance in the face at the age of six months.

13. A male child, æt. 18 months; has ekzema pustulosum of the head, with patches on the back and upon one knee; the eruption has been in existence three months.

14. Male child, æt. $6\frac{1}{2}$ months; ekzema capitis began at the age of two months; the infant was taken to Sunderland in very cold weather, at the age of seven weeks, and the eruption first appeared a few days later.

15. Male child, æt. 15 months; has ekzema capitis, which began at the sixth month, immediately after weaning.

16. Male child, æt. one year; ekzema papulosum of the head, face, shoulders, and chest; began at the eighth month.

17. Female child, æt. 5 months; ekzema broke out at the age of three months.

18. Female child, æt. 7 months; ekzema pustulosum capitis; began third month. This infant died from mismanagement. We saw it only once in consultation.

19. Female child, æt. 6 months; ekzema of the face and head; broke out at the age of three months, shortly after vaccination. The exciting cause was the use of camphor liniment to the cheeks for a cold. The child has had two boils. The mother is subject to boils in the axilla, but not to ekzema. She had an attack of boils when the child was four months old.

20. Male child, æt. 2 years; ekzema broke out at the age of three months, after vaccination.

21. Male child, æt. 8 months; ekzema made its appearance at the third month; brought up by hand.

22. Female child, æt. $4\frac{1}{2}$ years; has suffered from ekzema since the age of one month.

23. Male child, æt. $4\frac{1}{2}$ years; has ekzema of the head, chest, and neck. The eruption first broke out at the sixth week.

24. Female child, æt. 6 months; has ekzema of the scalp, face, and flexures of the joints of the limbs, together with furunculi. The eruption began at the age of two months, having followed a bilious attack at the sixth week. The mother is delicate. In the course of treatment it became necessary to open two abscesses.

25. Female child, æt. $2\frac{1}{2}$ months; has ekzema erythematousum on the inner side of both thighs; began at the age of two months; the child's wet-nurse lost her milk; the eruption commenced a week after a new and healthy nurse had been procured. The first child of the same mother had ekzema when a few weeks old.

26. A female child, æt. 2 years; has ekzema faciale, which began at the sixth month. The mother at the time had abscesses in both axillæ.

27. Male child, æt. 4 years; has ekzema capitis since the age of six months. Several exacerbations have occurred from time to time; at present there is roughness of the flexures of the joints; he has also been subject to furunculi. His mother reports of him that he was a large child at birth and as yellow as an orange, and that he was covered with hair until the sixth week.

28. Male child, æt. 5 months; has an outbreak of ekzema, which commenced a month previously. A former child also had ekzema.

29. Male child, æt. 8 months; has ekzema ichorosum, which broke out at the age of two months, from which period the child has been brought up by hand; the child always sickly.

30. Male child, æt. 3 years; ekzema capitis et palpebrarum; began at the seventh month.

31. Female child, æt. 5 months; ekzema of the face and trunk; commenced at the second month.

32. Male child, æt. 1 year and 8 months; ekzema faciei; came on at the fifth month, excited by vaccination; the arm was much inflamed, and abscesses followed. He was nursed up to the fourth month.

33. Male child, æt. 3 years; ekzema aurium; began as ekzema capitis at the ninth month, and was associated with teething. He has had three attacks of the eruption since the first, each one being apparently due to teething.

34. Female child, æt. 4 months; ekzema pustulosum; commenced at the end of the first month.

III.

NATURE, VARIETIES, AND TREATMENT OF EKBZEMA.*

THE great prevalence of ekzema, its manifold varieties, and its undoubted increase of late years among the population, will, I hope, be received as reasons sufficient for bringing the subject of ekzema under the notice of the British Medical Association.

The prevalence of ekzema is so considerable, that its name has taken root among the population, even as a "household word." There is scarcely a medical practitioner in Great Britain who has not, at this moment, a case of ekzema under treatment; or who, within a limited period of time, has not had such a case brought within his observation. Ekzema is common to all classes of society; is restricted neither by age nor sex; is equally frequent in the male and in the female; and is met with in the infant of a few weeks old, as commonly as in those who have reached the more protracted term of human existence. In one thousand cases of cutaneous disease of every denomination, there occur 298 instances of ekzema; very nearly one in every three, or, in other words, thirty per cent.†

The varieties of ekzema are so strongly defined that the ancient writers, very naturally, assigned to

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† Subsequent observations on 10,000 cases of cutaneous disease of every kind, occurring in the wealthier classes of society, have confirmed this estimate; the number of cases of ekzema in 10,000 being 3,352; that is, somewhat over 33 per cent.; or one in every three patients afflicted with cutaneous disease.

them different names ; and these varieties, possessing separate names, came to be considered, in the course of time, as distinct diseases. The Greeks, who, in great probability, adopted the popular names of these affections, called them psora, psoriasis, leichenes, and pityriasis ; all of which terms represent forms of ekzema.

In like manner, and with the same intent, the Romans made use of the words—scabies, impetigo, papulæ, and porrigo ; terms which may be regarded as agreeing with the Greek appellations already mentioned ; for example : psora comprehends scabies and impetigo ; psoriasis and leichenes * correspond with papulæ ; and pityriasis with porrigo.

To us, it seems, that a greater source of difficulty in the way of scientific investigation, can hardly be conceived, than the appropriation of separate names to simple varieties of one and the same disease ; yet, such was the case with regard to ekzema ; and to this cause we may trace much of the confusion into which cutaneous pathology had fallen at the time of the revival of learning, and on the clearing away of the mists of the dark ages, when learned physicians were called upon to extricate from the ruins of the Greek and the Roman literature, aided chiefly by the translations of the Arabian physicians, the descriptions of diseases of which, perchance, the exact parallel had ceased to exist among them, or had ceased to be as common as they were in earlier times ; and the difficulties were increased by the absence of that art which has contributed so much to the enlightenment of modern times—the art of printing.

In the sixteenth century, Mercurialis and Riolanus

* A Greek patient, who is at present under my care, suffering from ekzema papulosum of the back of the hands and wrists, the leichen agrius of Willan, calls the disease "Xero-leichenen," the popular name for the disease in her own country, and the equivalent of "dry leichen."

did good service to cutaneous medicine by their study of the older authors ; and by their personal investigation of these diseases. Plenck and Willan advanced our information still more considerably in the eighteenth century, and laid the foundation of the greater part of the knowledge which we possess at the present time. The descriptions left by the ancients, taken by themselves, were far from being clear ; the element of diagnosis by which a stranger could determine their identity was wanting ; that element was supplied by Plenck and Willan. These authors noticed the redness, the vesiculation, the papulation, the pustulation, the desquamation, the discoloration, of cutaneous diseases ; and upon these characters they formed their arrangement or classification. The student was no longer at a loss to decide upon the diagnosis, upon the identification of a disease ; he discovered the disease with certainty, and he made it his study, so that he soon became independent of the scheme which had supplied him with this important faculty. By degrees, he arrived at a position which enabled him to see beyond the limit which his masters had attained, and to discover that, however much he might owe to their assistance in giving him the power to scale the ladder of learning, there were faults in their plan ; and, it must be admitted, faults of a very serious kind :— that ekzema, for example, was capable of presenting all those appearances which constituted the majority of the classes and orders of these authors ; that it might be represented only by redness, or by papulation ; or by vesiculation ; or by pustulation ; or by desquamation ; and consequently, that a simple case of ekzema as it occurs upon different parts of the body of the same individual was liable to be taken to represent, at the same moment, all the different classes or orders established by our authors.

Therefore, while in the hands of the ancients

ekzema was designated, according to the diversity of its forms, by a variety of names; the classification of Plenck and Willan, at the same time that it gave us help in defining the disease, perpetuated and even increased the same evil. In the classification of these authors ekzema is one while an erythema; another while a leichen; anon, a vesicle; then a pustule; or even, a squamous affection. Such are the sources of obscurity which more modern views in respect of these diseases have in great measure removed; and for which medical science is greatly indebted to the labours of Hebra. We no longer divorce ekzema from itself, because it is one while erythematous; another while papulous; another while vesiculous, pustulous, or squamous; but we speak of ekzema erythematosum; ekzema papulosum; ekzema vesiculosum; ekzema ichorosum; ekzema pustulosum; ekzema squamosum, &c. Those designations, which were the distinguishing signs of the classes and orders of Plenck and Willan, are still retained; but instead of being the heads of classification, are made to fill the humble office of exponents of forms or varieties of a given disease.

Let us now turn to the question: What is ekzema? Ekzema is an inflammation of the skin, attended with alteration of its structure, and derangement of its functions. It is more vascular than in health, its vessels being in a state of congestion; its sensibility is morbidly increased, sometimes taking on the character of itching, tingling, or smarting, and sometimes that of pain; it is thickened by infiltration of serum into its tissues; is sometimes fissured and sometimes œdematous; it exudes a serous lymph at various times and in various quantity, sometimes in excessive abundance; the epidermis is sometimes raised into vesicles, sometimes wholly removed; and is reproduced unhealthily, so as to form muco-purulent secretions and squamæ of various size; and sometimes is replaced by a crust of greater or less

thickness, resulting from desiccation of the morbid secretions.

But ekzema rarely presents all these characteristic symptoms in an equal degree; and the diversity of the symptoms; and the modification which these symptoms undergo in different parts of the skin, in different constitutions, and in different temperaments, are the foundation of its varieties. As the varieties of ekzema are founded on the prominence of one or other of the symptoms of the disease, they may be easily designated and as easily recognised. For example: when the prevailing sign is redness, the eruption is an ekzema erythematosum; when the pores of the skin are erected into the form of papulæ, the disease is an ekzema papulosum; where there are vesicles, the variety is ekzema vesiculosum; where excessive exudation of a serous or colourless lymph is the leading sign, the case is one of ekzema ichorosum; where there are pustules mingled with the other signs, it is an ekzema pustulosum; and, where, as in the chronic forms of the affection, the epidermis is scabrous and scaly, the disease is an ekzema squamosum. These terms comprehend the principal forms of ekzema dependent on symptoms; but additional terms suggest themselves naturally for different conditions; for example: the skin is sometimes cracked and fissured—ekzema fissum. Sometimes the thickening and condensation of the diseased tissues, in a chronic stage of the affection, suggest the terms ekzema sklerosum and ekzema verrucosum. Sometimes the state of the part is aptly expressed by the term ekzema œdematosum; sometimes, from the nature of the secretion, ekzema mucosum. And, more than once, we have met with a case to which, on account of the severe pain by which it was accompanied, the term ekzema neurosum was correctly applicable.

It is rare to find an ekzema perfectly simple in its eruption, and capable of being represented singly by

any one of the terms already mentioned. More frequently two, or indeed several of the forms, may be present at the same time, and sometimes even the whole. For example: in one case we may have an erythematous ekzema combined with papulæ, which we should then distinguish by the name of ekzema erythematosum et papulosum (ekzema leichenodes); or, it might be an ekzema erythematosum et ichorosum; or, if the exudation of fluid from the inflamed surface were the most striking feature, we should name it an ekzema ichorosum, which might be, but in a less degree, erythematosum et papulosum; or even pustulosum. Or, the case might be one of ekzema vesiculosum et erythematosum; or, an ekzema squamosum (ekzema chronicum), which is, at the same time, in part, fissum; and in part, ichorosum. These terms have the advantage of being simple, expressive, and clear; they rise to the mind as freely as the terms: red, pimply, oozy, mattery, or scaly; and they render the narrator intelligible to every one conversant with medicine and medical language; while the commoner appellations ekzema simplex and ekzema rubrum, convey to the uninstructed in cutaneous pathology, either an erroneous idea or absolutely nothing at all.

Varieties of ekzema are also derived from situation; from the part of the body attacked with the eruption. For example, we have ekzema capitis; ekzema faciei; ekzema aurium; ekzema palpebrarum; ekzema oris et labiorum; ekzema axillarum; ekzema mamillarum; ekzema umbilicale; ekzema inguinum; ekzema pudendi; ekzema perinæ; ekzema ani; ekzema articularum; ekzema manuum et pedum; ekzema dorsi manûs; ekzema palmare et plantare; ekzema digitorum; ekzema unguium, &c. Moreover, we are taught by experience that in certain situations we shall be most likely to meet with one or other of the established varieties of the disease. For example: ekzema capitis et aurium are commonly ichorosum in

a recent attack, and squamosum at a later period; ekzema articularum, ekzema axillarum, ekzema inguinum, and ekzema pudendi, are also very frequently ichorosum, and sometimes mucosum. Ekzema of the fleshy parts of the forearms and legs is not unfrequently vesiculosum; as is also ekzema digitorum. Ekzema dorsi manûs is usually papulosum; while ekzema palmare is squamosum et sæpe fissum.

The extent of the eruption is also to be considered in designating its varieties. It may be general or it may be partial. When partial, the patches of the disease may be single or multiple; they may be defined (*figuratum*), or diffused (*diffusum*). Sometimes they suggest the idea of the dimensions and figure of a piece of money, *nummularæ*; and sometimes they are bounded by a prominent ridge (*marginatum*) and spread by the circumference, while the inflammation subsides within the included area; this is especially the case in a curious form of ekzema *marginatum* common in India, where it is known as the Burmese ringworm.

Willan and Bateman include all the varieties of ekzema under the three heads: *solare*, *impetiginodes*, and *rubrum*, corresponding with the ekzema *vesiculosum*, ekzema *pustulosum*, and ekzema *ichorosum* of our improved nomenclature. Hardy proposes four varieties; namely, *simplex*, *rubrum*, *fissum* (*fendillé*), and *impetigo*. Hebra employs the suggestive terms *squamosum*, *papulosum* (*leichenodes*), *vesiculare* (*solare*), *madidans* (*rubrum*), and *impetiginosum*.

It will be perceived that Hebra makes ekzema *squamosum* the first of his forms of ekzema; whereas I take it to be the last. Let me explain. Ekzema *erythematosum* is commonly accompanied with desquamation; and when the eruption is general, this is remarkably the case. Now, Hebra selects the moment when it is coated over with scales as the type of this form of the disease. But it must be remembered that the scales may be disposed of in a

variety of ways : there was a time before which they were formed ; there is a time when they have ceased to be produced ; there is an intermediate time when they may be removed artificially by dressings, poultices, or baths. What are we to call the disease when the scales and desquamation are no longer present ? The answer is plain ; the redness, the erythema remains ; indeed, the erythema is always there ; from the beginning before the scales existed, at the end, after they exist no more : hence, the term "erythematosum" appears to me to be more appropriate than "squamosum." Again, there are forms of ekzema in which there is redness, but nothing deserving to be called scales ; and to those cases, which are numerous, the term "erythematosum" is especially applicable.

On the other hand, when ekzema reaches its latest period, when it is chronic, there is still redness ; but scaliness and desquamation are a more predominant character than redness ; and it is to this period that I prefer to attach the term "squamosum." Ekzema squamosum I regard as the chronic stage of ekzema ; whilst ekzema erythematosum, which may also be chronic, applies with especial aptitude to the earliest stage of the eruption. Ekzema squamosum is, therefore, in my view of the pathological indications of the disease, an ekzema chronicum squamosum, and is the true representative of the much-abused term psoriasis. Psora represents the more active, and especially the exudative forms of ekzema ; and psoriasis, its chronic, its dry, and its desquamating form.

The Romans, who designated ekzema by the name of scabies, drew attention to a characteristic distinction between its moist and its dry form—scabies humida and scabies sicca. The Greeks appear to have had the same object in view in employing the words psora and psoriasis ; the former term corresponding with scabies humida, the latter with scabies

sicca. The distinction is a radical one, and of the first importance in the study of ekzema. Ekzema siccum, which is represented by ekzema erythematosum, ekzema papulosum, and ekzema squamosum, is specially distinguished by an absence of exudation, or by its presence in a very slight degree; whereas ekzema humidum, represented by ekzema vesiculosum, ekzema ichorosum, and ekzema pustulosum, is remarkable for the exudation of a serous and sometimes a muco-purulent fluid, often in astonishing quantity—a perfect flux. According to our observation, the dry forms of ekzema more than double in frequency those of the moist or humid kind; therefore a classification that assumes for ekzema a definition dependent on exudation as a pathognomonic sign, must, of a necessity, be incorrect.

A well-marked example of ekzema is an open page, upon which we may read, with the utmost distinctness, the pathology of the disease; and anything that may be wanting upon this page is supplied by the examination of a succession of cases. Let us note what such an observation teaches.

In the first place, there is redness: one while, uniform; another while, punctated. The cause of the redness is, congestion of the capillaries and smaller vessels of the skin. When the redness is uniform, the congestion is uniform; when the redness is punctated, the vascular plexus of the follicles is also congested. Sometimes the congestion of the vascular rete of the horizontal surface is primarily and chiefly apparent; sometimes the vascular rete of the vertical walls of the follicles is the first to show congestion, and the latest to retain it. When the latter is the case, our patients speak of an eruption under the skin; and we, ourselves, perceive a resemblance to the punctiform congestion of the exanthemata. Another phenomenon follows the con-

gestion of the vessels of the follicles; namely, the erection of their apertures or pores: these latter become raised above the level of the adjacent surface, and constitute small pimples. This is the mode of formation of ekzema papulosum.

Occasionally, we have the opportunity of observing another process by which an ekzema is developed. There may exist a slight itching of a part of the integument; if the part be carefully examined, a reddish punctum is apparent in the substance of the skin; the finger passed over this punctum discovers a hard granule: this is a congested follicle. If, to relieve the itching, we scratch the part, a papule arises; the head of the papule is torn off; a serous exudation follows, and then a small crust, which covers its summit. But, while the one original papule runs its course, the follicles around participate in the pathological process, and soon a small patch is formed, which presents all the characters of an ekzema: there is an erythematous redness; there is papulation; there is slight exudation—papular at first, but afterwards general; there is incrustation, and there is desquamation.

Congestion, therefore, gives rise to redness; it gives rise, also, to papulation, and to a moderate amount of swelling; but there is another important pathological change which results from congestion, and that is effusion or transudation. The congested vessels are relieved from their distension by the exudation of the fluid portion of the blood, and this exudation causes the thickening and condensation of the substance of skin. Sometimes the transudation from the vessels occasions œdema (ekzema œdematosum); sometimes it is effused beneath the epidermis, at the apertures of the follicles, and produces vesicles (ekzema vesiculosum); a continuance of this process causes the separation of the cuticle from the cutis; and the discharge from the latter of a serous lymph (ekzema ichorosum). In a

different constitution, or in another region of the body, the distension of the tissues of the skin may occasion cracks and fissures (*ekzema fissum*); from which an ichorous discharge may be poured out in greater or less quantity.

There is yet another pathological operation which occurs in the morbid skin, and that is, an alteration in the formation of the epidermis. Where two folds of integument have lain in contact for awhile, and where, from the constant presence of heat and moisture, the cuticle has no power of acquiring its natural horny density, but remains soft and cellular, the surface of the derma is red, is more or less denuded of epidermis, and secretes a copious mucopurulent discharge, which is, in reality, an aborted and morbid cuticular substance; a cuticle arrested at its cellular stage and partly transformed under the influence of inflammatory action, and the low vitality of the part, into a fluid which is principally mucus, but is mingled with a small proportion of pus. There is no lesion of continuity, or destruction of the epidermis, in this case; the mucopurulent matter is a simple secretion produced at the expense of the epidermis, a morbid conversion of that tissue into a fluid matter, which performs the same office to the otherwise unprotected derma, as that of the mucus to the mucous membrane. This is *intertrigo mucosum*; or, more properly, *ekzema mucosum*.

Now, in ordinary *ekzema*, a morbid alteration in the formation of the cuticular tissue takes place, similar to that just described. The copious exudation of *ekzema ichorosum* is not merely a serous fluid expelled from the vessels in consequence of the over-distension of their parietes; it is a positive secretion in which the cellular elements of the cuticle take an active part, and bestow upon the fluid its special properties—for example, its density and frequent opalescent appearance. That same

influence which causes the discharge of such immense quantities of fluid from the mucous membrane of the bowels in diarrhœa and cholera, is also active in ekzema ichorosum. In the course of a few hours, several pints of fluid may be poured out from the denuded surface of the derma, partly, no doubt, by way of excretion, but not less actively also by way of secretion.

The pathological phenomena present and in operation in ekzema, therefore, are not simply those of inflammation, but also involve a morbid aberration of secretion. The inflamed derma, which, at an early period of the disease, exudes largely a colourless lymph, at a later period may exude an opalescent and even a yellowish fluid; the consequence of the conversion of the mucous elements of the cuticle into pus. And the continuance of inflammation of the skin may so far lower the vitality of the surrounding tissues, that pustules may be developed around the circumference of the patch of eruption, and add fresh purulent matter to the morbid secretion; the case is then one of ekzema pustulosum, or ekzema impetiginodes.

In a disease of a secreting tissue, where inflammation is apt to continue for a considerable period, and where secretion is so greatly disturbed; where exudation takes place as the result of inflammatory changes, and as the result also of modified secretion,—we may expect to find crusts of various kinds formed on the inflamed surface; some resulting from the desiccation of altered secretions, and some from imperfect formation and altered structure of the epidermis. It is in the power of the medical man to prevent these crusts from appearing at all; but where the case has been left to itself, or where the treatment has been misdirected, we may find spongy crusts of a greyish, yellowish, greenish, or brownish tint, or almost black; we may find them loose or adherent; we may find scabs of various

degrees of density ; or we may find, where alteration of the epidermis is chiefly concerned, scales of various thickness and magnitude—thicker, larger, and rougher in more recent cases ; thinner and smaller in more chronic forms ; and diminishing by degrees to the furfuraceous and farinaceous desquamation of psoriasis or pityriasis.

Ekzema is a chronic affection, and has no specific course. Like other chronic inflammations, it has its beginning and its end ; or, in other words, its rise and its decline, with an intervening period of activity of greater or less duration. In a severe case the rise may present redness, heat, swelling, papulation, and sometimes vesiculation ; this may be regarded as a first stage or first period of the disease. Next, there may succeed exudation, incrustation, and sometimes suppuration ; this is a second stage, or second period—the stage of exaltation. Lastly, there will follow the third stage—the stage or period of decline—comprising desquamation, with redness and often thickening of the skin. We may regard such an example as a typical case of ekzema ; but the disease very rarely runs its course so simply. The first stage may linger on, and be lost eventually in the last, without the intermediate pathological phenomena ; or the whole course of the eruption may be a successive repetition of the intermediate stage, without any alteration of the first. Even the last stage may exist in the form of thickening and chapping, without any preceding first stage. It is this great diversity of ekzema in pathological characters that is assumed as the distinction of its varieties, and which contributes so much to the obscurity of diagnosis of the disease ; whilst its irregularity of course enhances the difficulty of treating it successfully. It may be correct, therefore, to speak of a first, a second, or a third period of ekzema, in relation to a given attack of the disease ; but not so in relation

to ekzema in general; for, as we have endeavoured to show, in the great majority of examples of this affection, the regular succession of stages or periods is wanting; and it will be found more correct to employ the terms previously suggested as the proper designation of the forms of the disease. Again, in reference to the pathological phenomena presented by the disease during its three periods, the first might be named the erythematous, the papular, or the vesicular stage; the second, the exudative and encrusted stage; and the last, the squamous or desquamating stage.

CAUSES OF EKZEMA.—To conduct the treatment of ekzema with success, it is necessary not only to know the habits and phenomena of the disease—in other words, its pathology—but also to be able to form some judgment as to its *cause*. Careful observation has convinced me that the essential cause of ekzema is debility—debility of constitution or general debility; and debility of tissue or local debility. And further investigation has shown that constitutional debility may present itself in three forms; namely, as an *assimilative debility*, in which the organs of digestion and secretion are principally at fault; as a *nutritive debility*, where the powers of nutrition are chiefly concerned; and as a *nervous debility*, in which a morbid state of the nervous system takes the lead. In 300 cases of ekzema, 278 were referable to general debility, and 22 to local debility; and of the 278 instances of general debility, the examples of assimilative debility were 143, nutritive debility 103, and nervous debility 32.

Debility stands in the position of a predisposing cause of ekzema; but, as debility is itself due to certain causes, these latter must be regarded as bearing the relation of remote predisposing causes of the eruptive disease. Of the 278 cases of general debility already referred to, the remote predisposing causes, taken in physiological order, admit

of being arranged under twenty-four heads, as follows:—1. Hereditary diathesis; 2. Strumous diathesis; 3. Weakly parentage; 4. Errors of diet; 5. Errors of hygiene—namely, air, exercise, cleanliness, and clothing; 6. Vicissitudes of cold, heat, and moisture; 7. Transitions of seasons; 8. Ungenial climate; 9. Excessive labour, mental and physical; 10. Anxiety and affliction; 11. Sexual excess; 12. Vaccination; 13. Dentition; 14. Excessive growth; 15. Deranged digestion; 16. Deranged menstruation; 17. Uterine, reproductive, and puerperal derangements; 18. Fevers, eruptive and malarious; 19. Gouty and rheumatic diathesis; 20. Constitutional and organic disease; 21. Nervous shock and fright; 22. General cachexia; 23. Hæmorrhage; 24. Local injury or disorder.

If we consider them in the order of their numerical importance, the arrangement in reference to the leading remote predisposing causes would stand as follows:—Deranged digestion, 51; errors of diet, 33; weakly parentage, 21; vicissitudes of cold, heat, and moisture, 21; anxiety and affliction, 16; hereditary diathesis, 16; ungenial climate, 14; constitutional and organic disease, 14; excessive labour, mental and physical, 11; uterine, reproductive, and puerperal derangements, 11; errors of hygiene, 10; gouty and rheumatic diathesis, 8; deranged menstruation, 7; fevers, eruptive and malarious, 7; excessive growth, 7; vaccination, 7.

In reference to the three subdivisions of the remote predisposing causes—namely, assimilative, nutritive, and nervous—the most numerous remote predisposing causes of assimilative debility are met with under the heads of—deranged digestion, 49; vicissitudes of cold, heat, and moisture, 13; constitutional and organic disease, 12; and anxiety and affliction, 11. The chief remote predisposing causes of nutritive debility occur under the heads of—errors of diet, 28; weakly parentage, 13; hereditary

diathesis, 12; vaccination, 7; excessive growth, 7; and errors of hygiene, 6. The most numerous remote predisposing causes of nervous debility are met with under the heads of—*anxiety and affliction*, 5; *excessive mental and physical labour*, 4; *ungenial climate*, 4; *uterine, reproductive, and puerperal derangements*, 4; *nervous shock and fright*, 3; *weakly parentage*, 3; and *vicissitudes of cold, heat, and moisture*, 3.

After the remote predisposing and the predisposing causes of ekzema, follow the exciting causes, which are best illustrated by the group of local causes. Of the twenty-two cases referable to local debility, the exciting causes admit of being assembled under the following heads,—namely, *cold; heat; moisture, with cold or heat; clothing, bedding, etc.; friction; local irritants; local injury; varicose veins*. The most important groups in numerical value were, *cold; local injury; heat; local irritants; and varicose veins*.

TREATMENT OF EKZEMA.—If the foregone premises with regard to the causes of ekzema be correct, the treatment of ekzema resolves itself into a treatment of debility—a treatment of constitutional debility, and a treatment of local debility; and the influence which we are called upon to exercise over our patients is one which shall have for its object to restore power, and thereby to regulate function and to confirm health; for health is nothing more than correct function united with normal power.

In general terms, our constitutional treatment must be directed to the regulation of the functions; and, concurrently with regulation of functions, to the restoration of the tone, the vigour, the vitality of the general system. In the most numerous group of cases, those which depend upon debility of assimilation, our attention is principally directed to the digestive organs and the secretions. In the next most numerous group, those which are due to

nutritive debility, the digestive and secreting organs must also be carefully examined, although they are less likely to be faulty than in the preceding group; and we are enabled sooner than in the former case to resort to our strengthening remedies. The same remarks apply to the third group, originating in nervous debility, while, in these latter, we have to deal with the special indication of weakened power of the nervous system.

A more particular direction is given to our treatment by the recognition of the remote predisposing cause. The commonest of the remote predisposing causes of ekzema we have seen to be derangement of digestion and errors of diet; we have but to include the consideration of these causes in our general treatment for regulating the digestive organs and secretions and restoring tone, and our treatment will be complete.

Next to the preceding comes a group of causes in which the laws of hygiene have been infringed: for example, vicissitudes of cold, heat, and moisture; errors of air, exercise, cleanliness, and clothing; climate, and seasons. These various causes are too suggestive to call for special comment. The same may be said of another group of remote predisposing causes; namely weakly parentage, hereditary diathesis, and strumous diathesis. Then comes a group, of which labour in excess, both mental and physical, together with anxiety, affliction, nervous shock and fright, and mental distress of every kind, are the leading features. Next we have debility proceeding from the morbid operation of functions natural to the body: for example, dentition; excessive growth; and sexual excess. After these, there are the disorders of female functions; deranged menstruation; together with uterine, reproductive, and puerperal derangement. And, lastly, there is the debility which is due to the existence of other diseases: for example, vaccination; general cachexia;

eruptive and malarious fevers ; gout and rheumatism ; hæmorrhage ; and visceral disorder.

The question, therefore, How shall we treat a case of ekzema ? is not so simple in one sense as might be imagined, inasmuch as it demands a lengthened inquiry into constitution and cause ; but simple enough in another sense, because it involves no more, but quite as much, as the treatment of any other disease to which the human constitution is liable. To treat an ekzema judiciously and correctly, we must know the sex and age of the patient, together with the predisposing cause, the remote predisposing causes, and the exciting cause of the disease. It may be that our treatment must be directed to the restoration of digestion and secretion ; or to the strengthening of an exhausted vitality ; or to combating an inherent and inherited weakness ; or to the improvement and sustainment of defective power ; or to the regulation of disorders of the female system ; or to the cure of visceral or of organic disease. In a word, the highest and best qualities of medical art and science must be put in practice, with foresight and discretion, for the treatment of an ekzema ; the universal must submit to become the handmaiden of the special.

The agents of the constitutional treatment of this disease, our remedies, belong chiefly to the class of aperients and tonics ; while, as adjuvants, we have recourse to sedatives, alteratives, and stimulants. Our best aperients are : sulphate of magnesia ; and the purgative extracts, either alone, or when specially indicated, united with blue-pill or calomel. These remedies clear away accumulated ingesta and secretions from the alimentary canal ; they restore a torpid and lethargic function, in this sense performing the part of derivatives from the inflamed tissues ; and they promote healthy secretion. But aperients require to be used with great judgment ; they must neither be carried too far, nor continued too long ; our object

should be to imitate nature as closely as possible; and above all, to avoid lowering the powers of the constitution. Nothing reanimates the energies of the organism so much as the healthy operation of the natural functions of the body: this should be our aim; and, when so applied and skilfully used, an aperient, instead of producing exhaustion, becomes a powerful tonic to the entire frame. The sulphate of magnesia in small doses possesses all these good qualities; it restores the function of the alimentary and urinary mucous membrane, and agrees with most constitutions. Some there are, to whom the warmer aperients or the mineral purgatives are more suitable; but this is a matter that can be determined only by observation. Again, we are influenced in our selection of an aperient, often by the season, and often by some collateral object, such as derivation; in the spring and summer, saline aperients and neutral salts may be indicated, whereas, in a colder season we should prefer the warmer remedies, and, in seeking for a derivative, we should possibly prefer aloes to Epsom salts.

Besides their direct effects of removing obstacles and promoting normal secretion from the mucous membrane, aperients have the property of rendering absorption and nutrition more active. How usefully on many occasions do we put this property of aperients to a purpose in removing effusions from the tissues, in carrying off waste humours, and stimulating nature to be more eager in the assumption of fresh material. It is marvellous, how much may be accomplished by the judicious use of remedies, and with what certainty the results which we seek to obtain may be secured. If we run the eye down our list of remote predisposing causes, other remedies suggest themselves which may be combined with our aperients to adapt them to a particular purpose; let us instance rheumatism, which draws our thoughts towards the iodide of potassium, gout

towards colchicum, and uterine diseases towards alkalies with bromine and iodine.

If we turn our attention in the next place to the tonics which may be found suitable for the treatment of ekzema, we find: simple vegetable bitters, cinchona and quinine, chalybeates, the mineral acids—hydrochloric, nitric, sulphuric, and phosphoric, and, above all, arsenic. Among simple vegetable bitters with what respect must we speak of gentian, calumba, orange-peel, quassia, chirayta, chamomile, and hop; in infusion or decoction; in extract or in tincture; in combination with the mineral acids or with ammonia, soda, or potash. How admirably cinchona and quinine perform their part; cinchona in decoction or tincture, or liquor, with sulphuric acid or with ammonia; and quinine in solution, with an excess of sulphuric acid. How perfect a remedy is one grain of quinine, with one drachm of sulphate of magnesia, seven minims of dilute nitric acid, and an ounce and a half of infusion of roses, both as a gentle aperient, a corrector of acidity, a promoter of mucous secretion, and as a tonic. Then the chalybeates, iron and its salts, the sulphate, the tincture of the hydrochlorate, the citrate, the superphosphate, the iodide, and the citrate of iron and quinine. Next, the mineral acids combined with the bitter tonics, and especially the nitro-muriatic and the phosphoric. Again, as a nutritive tonic we have the cod-liver oil; and our list of remote predisposing causes will discover several sections in which that remedy is peculiarly applicable; for example: strumous diathesis, excessive growth, and sexual excess.

All that precedes applies to any disease of the human frame, whether it be of the lungs, the heart, the liver, the brain, the kidneys, or the womb; the treatment now under consideration is catholic and not special; its aim, to bring back normal function, and so to restore health; it is the routine of the

physician's art; but there is a remedy which possesses a special influence on the skin, and has long been held sacred in cutaneous medicine, namely arsenic. When all has been effected that can be accomplished by aperients, alteratives, derivatives, and tonics, then comes the reign of arsenic, and at that moment arsenic is triumphant. But arsenic must be regarded, not as our common weapon, but as our reserve; to be administered when it can do no harm, and when there is every probability of its doing good. Arsenic is a tonic, a tonic which influences chiefly the nerve-substance, and not only gives force to, but improves the nutrition of the nervous matter; in this way it operates upon the trophic system of nerves throughout the economy; and in cutaneous medicine we have evidence of its remarkable powers upon the skin. Arsenic accelerates those actions of the skin which tend to its nutrition and renovation, and therein it becomes a healer of its eruptions, and a valuable aid to the cure of ekzema. But arsenic, above all medicines, must be handled with judgment and care; it must be jealously watched, lest it give rise to any unfavourable symptoms, and its use must be suspended at once if there exist even a doubt of its healthful operation. Above all, it is to be borne in mind that only at the right moment is arsenic applicable, and that right moment can only be determined by watchful care, or by long experience.

Our Pharmacopœia is rich in preparations of arsenic, but the most valuable are, the liquor potassæ arsenitis, and the liquor arsenici chloridi; the dose of the former applicable to an adult suffering with ekzema, is two to four minims; and of the latter, double that quantity.* Some years ago, in a paper on ekzema infantile, I laid before the British Medical

* The British Pharmacopœia has equalized the strength of these preparations, so that the dose, now, is the same for both.

Association a formula for the administration of Fowler's solution; and experience has assured me that no better form can be employed for its administration.* Arsenic should always be administered in small bulk, and the formula in question gives one drachm of fluid as the dose, and always on a full stomach, or, if possible, in the midst of a meal. The object of these precautions is obvious; arsenic is intended especially as an improver of nutrition, and therefore should be made to enter the stream of blood with the chyle; in its nature it is an irritant to the mucous membrane, and, therefore, it should be administered at a time when the lining membrane of the stomach is coated with mucous secretion, and at the same time when, by mixing with the mass of the meal, the remedy is largely diluted.

All the processes of renovation which depend upon nutrition are slow; hence, as we look for the good effects of arsenic in the improvement of nutrition, we must be prepared to continue its use for a considerable time. This is another reason for administering arsenic in small doses, independently of the suggestions to the same effect gathered from experience. Indeed, by employing it in larger doses, we naturally frustrate the objects which we ourselves have in view; we set up the irritant action of the medicine; we excite nausea, sickness, pain in the stomach or alimentary canal, prostration of nervous power, or cough, and then we are compelled to suspend it. While, on the other hand, administered with judgment and discretion, there is no safer medicine in the Pharmacopœia; and, at the same time, in my opinion, there is none to equal it in excellence and usefulness.

To be a successful practitioner in the treatment of

* R. Vini ferri, ℥iss; syrupi simplicis, ℥iij; liquoris potassæ arsenitis, ℥j; aquæ puræ, ℥ij. Misce. Fiat mistura; ℥j pro dosi.

ekzema, a medical man must be an accomplished physician; to manage the local treatment with success, he must also be an able surgeon. The local treatment of ekzema must be conducted according to the general principles of surgery. The inflamed part must be soothed in the acute stages of the disease, it must be supported and stimulated during the chronic stages, and it must be excited to a new action in the most chronic stage of all. To soothe, we must employ water-dressing, unguents, cerates, well-adjusted bandages, and rest. To give local tone, we must have recourse to stimulant applications of various kinds.

The water-dressing is useful where there is heat, pain, itching, or tension, but should not be continued beyond the period during which those symptoms exist; for, when prolonged for too great a time, it lowers the tone of the tissues and perpetuates the eruption. In our list of remote predisposing causes, it will be seen that one amongst them is "moisture with heat," the exact condition which at one moment of the disease we employ with advantage in the use of the water-dressing. Whereas, we could hardly adopt any more certain means of producing ekzema artificially, than by the application for a long time of water-dressing to a healthy part of the skin. This operation is often seen in practice, in the eruptions which follow the lengthened use of poultices.

When the local inflammation partakes of the sub-acute character rather than the acute, and when the water-dressing has effected the purpose for which it was applied, we may have recourse to cerates or ointments. As a preliminary to both these appliances, all crusts and sordes should be carefully wiped or washed away from the inflamed part; if they be dry and hard, the water-dressing, or the ointment-dressing may be applied with a view to soften them, and then they should be removed, and the dressing with the ointment nicely adjusted, and, wherever

practicable, secured in position by a bandage ; where this cannot be done, then we must have recourse to adhesive straps. In selecting an ointment, the best with which I am acquainted is the benzoated ointment of oxide of zinc. It should be spread thickly on the lint ; the dressings should be shaped so as not to overreach the sound skin, and the roller of elastic cotton bandage should be put on smoothly, and with a view to produce equable pressure on the eruption, and support to the vessels of the limb. On a part of any extent it is more convenient, and we avoid wrinkles thereby, to apply the dressing in slips, and dispose them in the manner of a many-tailed bandage ; and when a limb affected with ekzema is carefully packed up in the manner described, it may be left for twenty-four hours, and in more chronic cases for forty-eight hours, without disturbance ; then it should be unpacked, re-dressed, wiped with a soft napkin to remove sordes, and packed up again for a similar period. While packed up in this way, the itching of an ekzema commonly ceases, and the patient is saved from the annoyance and suffering of that disagreeable symptom, while the skin returns gradually to its healthy condition. If there should be heat and burning of the limb when packed, the bandage may be sopped with water, and then we get the advantage of the water-dressing superadded to the tonic treatment.

Where great irritability prevails in the constitution of the patient, we require to have recourse to sedatives ; and where irritability is present in the part, we may find it difficult to contrive a dressing which will perfectly suit the eruption. Sometimes grease of all kinds acts as an irritant, and then we are driven for a while to the use of lotions or powders. Sometimes a sedative, such as the *acetas plumbi*, added to the ointment, relieves the irritability ; sometimes a more stimulating application, such as the *unguentum resinæ flavæ*, or the ointment

of juniper tar. At other times we may put an end to the irritability by pencilling the surface with a weak solution of the nitrate of silver in nitrous ether. Again, we rarely fail to relieve the irritability by undressing the part, washing it thoroughly with the juniper tar soap, drying it, and dressing and packing it up again as before. The successful treatment of ekzema needs many resources ; but only such as may be explained on the recognized principles of physiology and surgery.

The erythematous form of ekzema yields very kindly to the benzoated ointment of oxide of zinc ; so also do the moist forms of the eruption, the dressing being aided by moderate compression with a bandage. Ekzema ichorosum must be followed up patiently with this plan of local treatment until the ichorous secretion ceases to be formed, and the eruption heals. But the chronic forms of the disease represented by ekzema squamosum, require a stimulant treatment. Washing with the juniper tar soap, dressing with the unguentum resinæ flavæ, pencilling with a solution of nitrate of silver, or a strong lixivium of potash. Whenever these stronger local remedies are used, the eruption should be subsequently dressed, *more dicto*, with the benzoated ointment of oxide of zinc, and then carefully packed up.

In the moist forms of ekzema there is always a considerable quantity of serous lymph present in the tissues of the skin ; and, until that serous fluid is removed, either by absorption from within or by excretion from the part, the skin cannot return to its normal state. It is to the presence of this fluid infiltrated in the substance of the skin, that the chronic forms of ekzema owe their thickening, their induration, and their rupture ; the latter giving occasion to fissures and cracks, and being most conspicuous where the skin is naturally thick and wrinkled, as on the hands and fingers, or the feet,

behind the ears, along the borders of the mouth, and in the cleft of the podex. For this state of the skin in an aggravated form there is no remedy to compare with a solution of caustic potash. That application seems to purge the skin of its abnormal fluids, to promote absorption, and to give energy to nutrition; and it is amazing with what rapidity the cracks will heal, and the most chronic state of disease get well under this treatment.

IV.

PATHOLOGICAL PHENOMENA OF EKZEMA.

Correlations of Ekzema with other Diseases and with Constitutional Disorder.

As we assume it to be better to do little, than to do nothing at all; and that more cannot be expected of a man than he is capable of performing; we subjoin a few brief notes from our case-book in illustration of the phenomena of ekzema as they are presented to the medical man in daily practice; and with the view of contributing to a fuller knowledge of the natural history of one of the most unpleasant and troublesome, if not the most important, of the diseases which afflict mankind. On the present occasion our selection relates to the correlations of ekzema, for example, with furunculosis, pityriasis, scabies, chronic bronchitis and asthma, pruritus and neuralgia, erysipelas, and sykosis; with certain nutritive diseases, embracing dermatoxerasia, phytosis, scrofulosis, and lupus erythematosus; with certain constitutional disorders, as dyspepsia, hæmorrhoids, menstruation, parturition, lactation, uterine disease, and gout and rheumatism; with some affections

of childhood, namely, dentition and rubeola ; with varicose disease of the veins of the lower extremity.

EKZEMA WITH FURUNCULOSIS.

The first of these cases is an instance of genital ekzema ; the remainder belong to the group of accidental ekzemata ; the attack of herpes zoster was an accidental occurrence, but the long duration of the neuralgia herpetis may, very possibly, have had a corresponding relation with the existing taneous diathesis.

6293. A married lady, aged 47, has ekzema dendi with furunculosis of the axillæ. She has been ekzematous from childhood. At the age of 15 she had herpes zoster lumbalis, followed by neuralgia ; and she still feels a numbness in the lower limbs and experiences occasional neuralgic pains, as a sequel of the herpes.

6359. A gentleman, aged 28, has suffered from ekzema squamosum of the legs for three years ; the eruption being consequent on an attack of fever followed by great depression of the vital powers. For the last six months he has also been tormented with furunculosis.

7245. A maiden lady, aged 57, has ekzema squamosum of the feet ; she has been troubled with ekzema fissum of the feet and hands for ten years. During the last five years she has also been troubled with furuncles.

7346. A gentleman, aged 43, has ekzema squamosum, which has existed for eleven years ; during the last two years he has been much troubled with furunculus. He has resided for twenty-six years in India and China, and is now

suffering from dyspepsia, acidity, pale motions, and headache.

7537. A young gentleman, aged 18, has ekzema squamosum capitis, which has lasted two months; and for the last month he has been much troubled with boils.

7586. A lady, aged 65, has ekzema of the nostrils, which has teased her for four months; during the last week she has had a boil; she is suffering also from weakness of the eyes and lumbago.

7645. A gentleman, aged 26, has ekzema of the lower lip, and furunculi on the nape of the neck and back of the hands. Both affections have existed together for six months.

7653. A gentleman, aged 46, is suffering from ekzema of the arms, which has existed a few weeks; four years ago he was troubled with boils, which lasted for several months; and three years back he had ekzema of the nape and sides of the neck. He is a dyspeptic subject.

7665. A gentleman, aged 45, has intercrural ekzema and ekzema ani, which have existed for five months. For ten years he has been suffering from time to time with ekzema squamosum of the toes: this sometimes produces swelling and erythema, which is termed "erysipelas." For the last five years he has also been troubled with boils, which, he says, alternate with the ekzema.

7697. A gentleman, aged 48, has ekzema capitis, which has existed for four months; he has also intercrural ekzema and ekzema in the folds of the abdomen. During the same period he has been suffering from furunculi.

EKZEMA WITH PITYRIASIS.

6479. A young gentleman, aged 18, of delicate

constitution and leukæmic, is suffering from pityriasis, the sequela of ekzema capitis, which made its appearance two years before.

6790. A young lady, aged 10, has pityriasis capitis (ekzema furfuraceum capitis), which has existed for two years; she has, at the same time, ekzema papulosum of the legs.

7058. A Sussex farmer, aged 59, after an unusual degree of exposure to the sun in the month of July, and subsequent shampooing of his head, was attacked with pityriasis capitis (ekzema furfuraceum). Three years ago he presented himself with scabies, caught, as there was reason to believe, from the handling of money received by him at market. The scabies presented an ekzematous character, and was unusually irritable; and, conjointly with the present attack, denotes the existence of an ekzematous diathesis.

7179. An unmarried lady, aged 60, has ekzema squamosum digitorum, of five weeks' standing, induced by exhaustion caused by hot weather. Two years ago she was suffering from pityriasis capitis.

7231. A physician, aged 54, is suffering under pityriasis capitis; he has been ekzematous since the age of twenty-one.

7360. A gentleman, aged 24, has ekzema squamosum of the meatus of one ear; the disease has existed for four months. He has had pityriasis capitis from his childhood, and four years back was under treatment for that affection. He looks weakly; and his complexion is pallid.

7527. A maiden lady, aged 55, has pityriasis capitis, which has existed for several years; she has been ekzematous since childhood; and twenty years ago had an issue opened for the relief of ekzema ichorosum.

7553. A gentleman, aged 31, recently returned from Australia, has ekzema squamosum capitis, which has existed for four months. He also suffers from pityriasis capitis, which has troubled him for twelve years.

7659. A lady, aged 31, has pityriasis capitis (ekzema furfuraceum), which has teased her for three months; she has had slight attacks of ekzema on two or three occasions after her confinements.

7685. A young lady, aged 23, has pityriasis capitis, the sequela of ekzema capitis. When an infant she was hydrocephalic, and at present exhibits much nervous irritability; she is apt to faint on rising in the morning; has morning nausea, irregular menstruation, and poor appetite. She is tall and slender in figure.

EKZEMA AND SCABIES.

6334. A medical man, aged 46, is suffering from ekzema papulosum, which has teased him for three years, having taken its origin in the irritation caused by scabies. The acarus was, doubtless, allowed to remain undisturbed for a considerable period, but after its disappearance the nerve irritation remained and has been perpetuated.

7271. A young man, aged 21, is suffering from ekzema of the hands, the flexures of the elbows, the axillæ, and hips: this eruption has existed for five months, and is consequent on scabies.

7392. A gentleman, aged 24, has ekzema with ekthyma, which have existed for some months, and originated in an uncured scabies, which began a year ago.

EKZEMA WITH CHRONIC BRONCHITIS.

In severe cases of congenital ekzema, the mucous

membrane of the air-passages very commonly participates in the surface inflammation, thereby making manifest the known relation of the skin with the mucous membrane. This ekzematous inflammation gives rise at a later period to thickening of the mucous lining of the bronchial tubes, and a kind of bronchial asthma. The four following cases illustrate this part of the pathology of ekzema.

6559. A young lady, aged 9, has ekzema squamosum of the hands; her skin is dry, wrinkled, and ill-nourished, and has been so from her birth; ekzema showed itself at the sixth month, and she is at the same time a sufferer from asthma, consequent on chronic bronchitis.

7041. A little boy, aged 4, has ekzema of the popliteal hollow on each leg, with a small circumscribed patch on the forehead. This attack followed a severe catarrh and whooping cough.

7262. A man-servant, aged 40, has ekzema of the hands and front of the wrists; and some little in the popliteal hollows. He had ekzema in his infancy, and has occasional fits of asthma from chronic bronchitis.

7325. A young lady, aged 8, has ekzema of the joints, and of the pudendo-crural grooves; the ekzema commenced when she was three years old, and was accompanied for four years with a night cough, described as a "croupy cough." During the last twelve months the cough has improved, and the ekzema has grown worse. At the upper part of the thighs it presents the appearance of ekzema marginatum.

EKZEMA WITH PRURITUS, NEURALGIA, AND LEICHEN TROPICUS.

7352. A gentleman, aged 58, has ekzema squamosum of the occipital region of the head, attended

with sudden and violent fits of itching. The eruption has existed for three months, but he has suffered from occasional fits of pruritus for a year past. On being put upon a treatment which relieved the ekzema, he was seized with pruritus of the root of the penis and perineum.

7540. A gentleman, aged 57, is suffering from ekzema verrucosum, a very itchy form of the eruption; the disease being dispersed over the limbs, particularly the lower extremities, in small patches, little bigger than large prominent warts. He had been suffering from Colonial fever for five years; to this succeeded a troublesome pruritus of the skin, and the ekzema followed the pruritus.

7078. A married lady, aged 49, has had ekzema behind the ears, in the head, and the grooves of the folds of the skin of the trunk of the body, for three years. For twenty-two years she has suffered from neuralgia, which commenced six months after her marriage; and for ten years she has had a patch of area, which is still bare.

6520. A gentleman, aged 46, was attacked with prickly heat, leichen tropicus, shortly after embarking at La Plata for England; the prickly heat subsided into ekzema squamosum, with which he was affected in April, 1867. At this time he was seized with bronchitis, for which a saline treatment was prescribed. In June the bronchitis had ceased, and he was attacked with a pityriasis of the scalp and face. And in September the pityriasis had disappeared, and had given place to an irritable state of the urinary mucous membrane, accompanied with pains in the spermatic cords and in the loins.

EKZEMA WITH ERYSIPELAS AND SYKOSIS.

7184. A lady, aged upwards of 60, has ekzema of the groove behind the ears, extending upwards,

for a short distance, on the sides of the head. She has no ekzema anywhere else, and the present affection has lasted eight months. Five years ago she had erysipelas of the scalp after a fall; and two years ago a similar attack, which came on spontaneously. The latter may have been ekzema.

7088. A gentleman, aged 65, has ekzema squamosum capitis, which has existed for thirteen months. Six years back he came under our treatment for sykosis labialis.

7632. A medical man, aged 65, has ekzema erythematosum of the face, which has lasted three months. Twenty years ago he suffered from sykosis.

EKBZEMA WITH THE NUTRITIVE AFFECTIONS:—DERMATOXERASIA; PHYTOSIS; LUPUS ERYTHEMATOSUS; SCROFULOSIS, AND ADENOSIS.

7389. An unmarried lady, aged 47, has ekzema in a passive form, covering the whole surface of the body, but worst on the face, the hands, and the neck. She has suffered from ekzema from infancy; on the legs, the knees, and the shoulders, the ekzema has assumed the appearance and has all the characters of xeroderma.

7065. A gentleman, aged 49, has been suffering with *ekzema figuratum* on the back of the hands, for six weeks, and for this he was brought to us by his medical attendant. On further inquiry, we found that the whole of the trunk of his body was covered with *phytosis versicolor*, which he had had, he said, for twenty years. On the abdomen were several broad spots of *myrmekia*, or flat warts; there were also here and there some small pouches of *tegumentary molluscum*; while on the limbs were several *furunculi*. We had thus under our eye, on

the same person, five different affections of the skin ; some inflammatory, others simply disorders of nutrition : of the first kind were the ekzema and furunculus ; of the second, the phytosis, myrmekia, and molluscum. One other disease was discovered when we requested him to put out his tongue, namely, syphilitic aphthæ and rhagades.

7050. An unmarried lady, aged 37, has ekzema squamosum in small patches in the flexures of the hands and fingers. She has suffered from this disease for two years without any change. Her sister is the subject of lupus erythematosus.

7310. A little boy, aged 3, has ekzema of the head and neck, which began at the age of four months, after vaccination. For two years he has suffered from scrofulous abscesses ; he was nursed by his mother for the usual period.

6549. An unmarried lady, aged 44, has ekzema behind the ears and in the axillæ. She has suffered from ekzema for three years, but was cured in six weeks. Some months later, in the month of November, the eruption broke out upon the back of the head, and she suffered at the same time from severe itching of the nape of the neck. This latter attack was accompanied with enlargement of the cervical lymphatic glands, an unusual complication of ekzema.

EKZEMA WITH DYSPEPSIA.

6509. A gentleman, aged 63, has suffered under ekzema of the eyelids and flexure of the elbow-joints for eleven months. The affection began in the eyelids ; in the month of May it was attended with extreme redness and tumefaction and was taken for erysipelas, and has lingered in a squamous form until the present time. He is habitually dyspeptic,

labouring under what he terms "derangement of the liver."

6734. A physician, aged 65, has ekzema dorsi manûs, with patches of the eruption on the face, and dispersed over the body and limbs. He has suffered from the eruption for four years, but it has been worse during the latter half of that period. He is also much troubled with dyspepsia and constipation.

6948. An unmarried lady, aged 45, has ekzema papulosum pretty generally dispersed over the body and limbs, accompanied with hot flushes and some degree of swelling of the affected parts of the skin. The eruption has been in existence a week, and was preceded by headache and nausea. The headache is relieved, but the nausea still continues, and is not benefited by the eruption.

7248. A married lady, aged 63, has ekzema of the hands and feet, the eruption being vesiculous in the palms of the hands. It has been in existence for three weeks, and is associated with flatulent dyspepsia and constipation.

7312. A lady, aged 68, has numerous small patches of ekzema papulosum dispersed over the thighs, lips, and arms; they have existed for five months, and followed an attack of dyspepsia excited by the sea-air. She enjoys average health, but is nervous and subject to dyspepsia. On her cheek, under the right eyelid, is a small patch of sebaceous concretion closely incorporated with the cuticle, and fissured on the surface so as to form polygonal plates; a form of facial sauroderma consequent on imperfect nutrition of the skin.

7373. A lady, aged 55, has ekzema papulosum in small patches sprinkled over her arms and legs. The eruption has existed for three months, and is attributable to dyspepsia and torpid liver.

7382. A military officer, aged 35, has ekzema squamosum, dispersed in patches over the arms and legs; the eruption has been in existence for four years, and is attributable to service in India and the Crimea, producing exhaustion and dyspepsia.

7431. A wine-merchant, aged 36, has ekzema capitis of six months' duration; and for the last week is suffering from erythema tumescens of the upper lip. Two years ago he had ekzema of the face; he is troubled with dyspepsia, which he attributes to a necessity of his business, wine-tasting.

7669. A gentleman, aged 26, has ekzema squamosum labiorum, which has existed for six weeks; for four or five months he has had ekzema papulosum of the legs; and for three months has been much troubled with dyspepsia.

7695. A married lady, aged 39, has ekzema aurium, which has lasted for six weeks. Previously to the appearance of the ekzema she was feeling very unwell, and thinks herself relieved by the eruption. Four months back she suffered much mental anxiety, which destroyed her appetite; then she became weak and listless, and has still a wearied expression in her countenance. She mentions a series of small illnesses which had attacked her in succession:—1. Dyspepsia; 2. Urticaria; 3. a tubercle in the rectum; 4. Ekzema aurium.

7699. A medical man, aged 52, has ekzema of the back of the hands, arms, and ears; the eruption began in the hands twenty-six years ago; he had congenital ekzema as an infant, and has also suffered considerably from rheumatism. He mentions a curious fact, namely, that some years back he took a sea voyage, and was very sick; the eruption ceased during the continuance of the sickness, and did not reappear for several years.

EKZEMA WITH RHEUMATISM AND GOUT.

6132. A clergyman, aged 40, has ekzema papulosum of the back of the hands, which has lasted for eighteen months. This affection is associated with the mal-assimilation of rheumatism; he is subject to slight attacks of ekzema and rheumatism in hot weather.

7719. A cook, aged 33, has ekzema squamosum of the hands and fingers; it followed rheumatic fever thirteen years back, but has been worse during the last four years, subsequently to a second attack of rheumatism.

7767. A gentleman, aged 37, has ekzema pudendi et articulorum, which has existed for twelve months. He is an engineer, very hard-worked, has much mental pressure, to which has been added affliction; and he has much night travelling. The ekzema broke out after a fatiguing night journey, and was followed by an attack of rheumatic gout, and subsequently by a severe bilious seizure, the eruption maintaining its ground throughout.

6680. A maiden lady, aged 30, is suffering from ekzema squamosum figuratum of the arms; her usual illness assumes the character of rheumatic gout, from which she has been free for some months. The ekzema has continued for three weeks.

7128. A gentleman, aged 69, has ekzema squamosum of the neck and face; it has lasted a year, having been excited by the heat of summer; and, at present (July), is very troublesome. He is of gouty diathesis; and, three days after his visit to us, he was attacked with gout in the wrist, to the great relief of the ekzema.

EKZEMA WITH MENSTRUAL, PARTURIENT, AND UTERINE
DISORDER.

7030. A lady, aged 35, has a circumscribed patch of ekzema squamosum on the side of the neck ; she has ekzema ichorosum behind the ears, and, on the scalp just above the ears, ekzema squamosum. This attack has lasted for six months. For some months she has been subject to attacks of gravel, which recur every fourteen days. She states that, at the age of 15, she had a violent attack of ekzema consequent upon checked menstruation ; and that the ekzema was repeated three times, at intervals of eighteen months apart.

7546. A young married lady, aged 24, has ekzema ichorosum of the left thigh and hip ; the eruption has lasted for three months. Seven years back she had a similar attack, between the thighs at the upper part. Of late she has been suffering from excessive menstruation, is debilitated, and has a soft, pale tongue. She has lost her parents ; and a brother is suffering from scrofulous caries of the tibia.

6119. A young married lady, aged 19, has ekzema vesiculosum et squamosum of the fingers, which has existed for eighteen months. She has been two years married, and this eruption commenced during her pregnancy. She has since nursed her child, and has ceased nursing him only two weeks.

7361. A lady, aged 32, has ekzema of the face, neck, and hands, which has lasted for two weeks. Two years back she experienced ekzema for the first time while nursing ; it was repeated under the same circumstances a second time. This is her third attack : she is sensitive and delicate of constitution.

7770. A lady, aged 29, has ekzema vesiculosum in the palm of the hands and in the groins, of one week's duration. She has been subject to occasional attacks of ekzema for seven years; the first attack took place shortly after her confinement with her first child. At present she has an infant one year old.

7320. A married lady, aged 39, has ekzema of one labium with pruritus vulvæ; the ekzema has been in existence for six months, and is associated with morbus uteri.

EKZEMA WITH INFANTILE DISORDERS: DENTITION AND RUBEOLA.

6384. A child, aged nine months, has a severe attack of ekzema; it has been in existence for ten weeks, and was excited by the cutting of his teeth. He was brought up by hand from the fifth month.

6385. In another case, presented on the same day, the mother remarked that several of her children "had cut their teeth with ekzema."

6431. A little girl, aged 7, suffered from ekzema during her first dentition, and got well. With the second dentition the eruption has returned, and has lasted for two months. The seat of the disease at present is her hands.

6775. A little boy, aged 4, has ekzema pretty extensively dispersed over the whole body; it began when he was eighteen months old, and is attributable to dentition.

6160. A delicate boy, aged between 6 and 7, had rubeola in the autumn; during the winter he suffered from chilblains; and at present (January 24th) he has a catarrhal discharge from the nose, and his skin is sprinkled over with ekzema papulosum in separate papules and in blotches. Herein we have presented to us a series of causes of nerve-

exhaustion which favour the development of a disease of debility, namely ekzema.

6658. A lad, aged 8, has a patch of ekzema on the chin, which has existed for ten days; he is just recovering from a slight attack of measles which he had a month ago.

7606. A little girl, aged 15, has had ekzema pustulosum et ichorosum of the head for twelve years; the ekzematous disease followed rubeola.

7789. A little girl, aged 9, has ekzema capitis, ekzema of the borders of the eyelids, and of the meatuses of the ears; the latter has caused partial deafness. The ekzema followed upon the debility caused by an attack of measles.

EKZEMA WITH VARICOSE VEINS, INCLUDING HÆMORRHOIDS.

6156. A lady, aged 58, has a small patch of ekzema squamosum, situated upon the curve of a dilated vein of the leg; the eruption has existed for six months, and is troublesome, chiefly in the evening.

6786. An unmarried lady, over 60 years of age, has ekzema squamosum of the right leg, attended with some degree of œdema; its predisposing cause is, obviously, varicose disease of the saphenous veins.

6787. A gentleman, aged 44, has ekzema squamosum of the popliteal space; it has existed for two years, and is due to varicose disease of the saphenous veins.

6899. A lady, aged 53, has ekzema erythematosum of one leg, attended with considerable pruritus. The eruption is evidently due to a varicose state of the veins; it has been eighteen months in existence, and is only slight, but has been aggravated of late by the necessity of being much on her legs in nursing an invalid. It commenced with a sensation of itch-

ing; she was tempted to scratch the itching part; some papules then made their appearance with an increase of pruritus, and subsequently an erythematous redness spread to the size of the hand.

7073. A married lady, aged 56, has ekzema cruris from varicose veins.

7185. A gentleman, aged 60, has ekzema of the legs, which has existed for thirty years, and was preceded by varicose veins for ten years. The eruption covers the whole of the legs below the knee, and the greater part of both thighs, while there are patches on the back of the hands, but the rest of his body is free. He states that the varicose disease of the veins of the legs was a sequela of typhus fever, which "settled in his legs."

6363. A lady, aged 50, has been teased for twelve months with ekzema ani; the itching is sometimes intolerable; she also suffers from hæmorrhoids with occasional hæmorrhage. The ekzematous tendency of her constitution is at the same time manifested by the presence of ekzema squamosum and ekzema fissum of the hands and fingers.

RECURRENT EKZEMA.

6244. A gentleman, aged 37, has ekzema in the groove behind the ears; nine years previously he had ekzema capitis.

6382. A gentleman, aged 44, is suffering from an attack of ekzema perinei, which has just made its appearance; seven years back he was for a long time teased with ekzema of the popliteal spaces.

6386. A lady, aged 55, has a somewhat severe ekzema capitis, ichorous and squamous: it has lasted a year; and has recurred from time to time for a period of fourteen years.

6414. A gentleman, aged 40, has had ekzema of

the perineum extending around the anus, for ten weeks. Seven years back he suffered from general ekzema.

6429. A gentleman, aged 36, is suffering from ekzema capitis, which came on in the winter time, and has lasted for three months. Five years back he had an attack of general ekzema, which continued for fifteen months, and since that time the ekzema capitis has returned annually.

6659. A maiden lady, aged 54, has ekzema papulosum et ichorosum of the back of one hand; the eruption has lasted four months. When 26 years of age she had an attack of general ekzema, consequent on nursing a sick relative. Her sister, aged 56, has had gutta rosea papulosa around the mouth for nine years.

6653. A gentleman, aged 46, has ekzema of the scrotum, penis, and perineum; the eruption has been a month in existence. He has also a patch of ekzema squamosum on the arm, which has occupied its present position for five years.

6551. A married lady, aged 37, has suffered from ekzema squamosum of the face and cheeks for five years; three months later the ekzema attacked the perineum and anus. At the age of 20 she had a previous attack of ekzema. Although married ten years, she has had no family.

7043a. A lady, aged 54, has a small patch of ekzema on the side of the nose; last year she had ekzema inguinum, and fifteen years back pityriasis capitis, otherwise she has enjoyed good health. At present she is suffering with headache and noises in the head, which have lasted a year; indeed, since the cessation of menstruation, which only took place a year ago.

7076. A married lady, aged 63, is suffering from ekzema pudendi et inguinum. The present attack

has lasted one week, having been induced by the heat of the weather (July). Seven years back she had a similar outbreak, at the same season of the year.

7226. A gentleman, aged 51, has ekzema capitis and ekzema manuum, of six weeks' duration. The present eruption broke out in July, and he had a similar attack a year ago.

7268. A gentleman, aged 60, has ekzema of the hands, and of the hands only. The first attack took place thirty-five years ago, the present three months back, and he has had one intermediate attack. In the first he lost his nails, in the second and present attack the nails are rough and uneven from defective nutrition. Eighteen months ago he suffered much affliction from the loss of his wife, and latterly he has been dyspeptic.

7358. A lady, aged 67, has ekzema axillare: it has now been in existence for a few weeks. Four years ago she had a similar attack, which lasted for two months; and again one year back, when it remained for three months.

7403. A gentleman, aged 70, has ekzema papulosum of the legs, which has lasted for seven weeks; several years back he had a similar attack.

7577. A gentleman, aged 23, has ekzema capitis, which has lasted for three months: a year back he had a similar attack.

7512. An unmarried lady, aged 31, has a patch of ekzema, about an inch in diameter, on the point of the chin: it has recurred from time to time for two years.

7598. A gentleman, aged 35, has ekzema capitis, which has existed four months. He was first attacked with ekzema sixteen years ago, when it affected his ears; and two years back his head, in a similar manner to the present.

7593. A married lady, aged 58, has a circumscribed patch of ekzema squamosum on the knee: it has lasted two years. Some time previously she suffered from intercrural ekzema.

7647. A gentleman, aged 52, has ekzema papulosum of the trunk of the body, which has been in existence for four months. He has been subject to a similar eruption for thirty years; it recurs annually, in the middle of the summer, and breaks out on a sudden. At present he has, in addition, a boil on one arm.

7792. A clergyman, aged 48, has two patches of encrusted ekzema ichorosum on the legs: the eruption has existed for six months. Fifteen years back he suffered an attack of ekzema.

7630. A gentleman, aged 67, has ekzema papulosum of the thighs with troublesome pruritus: it has existed for three weeks; three years back he had a similar attack.

SUBSTITUTIVE EKZEMA.

9047. A gentleman, aged 69, a hale, healthy man, has ekzema of the head and face, arms and hands, as also on the lower limbs. The eruption began on the scalp three months back, and within the last six weeks has spread to the already mentioned parts. It is his first attack, and the eruption presents the usual variety of character in the different regions affected. It began on the scalp as a mere scurfiness, as an accumulation of fine scales, in dermatological language, a pityriasis; at present it is a psoriasis or ekzema squamosum. The ears are red and swollen, and somewhat roughened by desquamation, ekzema erythematousum; behind they are squamous and ichorous; the eyelids, face, and neck present the erythematous form of the affection, as also do the arms, hands, and legs. The pruritus

on the face and neck is troublesome, but most so behind the ears, where exudation is taking place.

This gentleman enjoys excellent health, with the exception of occasional temporary disorder of the digestive organs, which takes on the character of slight diarrhoea. He was a little exhausted by the hot summer of 1868; he then suffered some anxiety on account of the illness of his wife; for his wife's health he exchanged the bracing climate of Thanet, his ordinary residence, for the relaxing climate of Hastings, and it was while he was at Hastings that the first external manifestation of exhausted nerve-force took place, showing itself in the form of ekzema erythematosum capitis. On his return home he had one of his usual bilious attacks, and as this subsided the eruption became general over his body. As is commonly the case, under the influence of a substitutive disorder, when the latter creates no constitutional irritation, he is feeling remarkably well, his digestive organs are performing their functions properly, his tongue is clean, and he is, in fact, better than usual.

5476. A married lady, aged 56, suffered from disorder of digestion, her "bilious attacks" recurring pretty regularly every three or four weeks. For three months she missed her gastric disorder, and was then seized with ekzema, which appeared in patches on various parts of her body and limbs.

Five years later she was exposed to considerable anxiety, loss of rest, and fatigue, in consequence of the illness of a daughter whom she nursed. On this occasion the ekzema returned, attacking the pudendum and axillæ, and lasted for eight months. The eruption was accompanied with abscesses in the axillæ and boils on the lower part of the trunk and thighs. The boils were small; they began as itching pimples, and were fourteen days before they reached their full size; they then threw up a

phlyktænous vesicle, and afterwards slowly subsided.

Two months after getting well of the ekzema, this lady had a smart attack of neuralgia of the nape of the neck and back of the trunk. She compared the pain in her back to the sensation of opening and shutting of the spine.

5355. A gentleman, aged 55, the very picture of health, has ekzema capitis, which has continued for one month. For twelve years in succession he was a sufferer from gout, the attacks being frequent but slight. The gout then left him for nine years, and during the last three years ekzema has taken the place of gout. Ekzema and gout are not unfrequently interchangeable.

7094. A married lady, aged 36, has ekzema papulosum of the chest and abdomen: the eruption has existed for a fortnight, and followed exertion (July) under which she became overheated. She had been disordered in health for some weeks previously to the attack of ekzema; in the first place, she had a sore and blistered tongue; subsequently, an attack of hæmorrhoids: both these disorders are now well.

7289. An unmarried lady, aged 32, has ekzema palmare et digitorum, which has existed for two years; during the same period she has also been troubled with furunculosis. In the preceding winter she suffered from bronchitis, and at that time the ekzema was relieved.

V.

ETIOLOGY OF EKZEMA.

Our friend Professor Laycock, writing to us under date December 18th, 1867, makes the following observation in reference to the "contagious furuncu-

loid":*—"Although the cause, whatever it be, is asthenic or cachectic in its influence, it is often only so locally. That is to say, a man or woman may have boils or ekthyma, and yet be in good health generally." Herein is a suggestion for a theme of much importance, and one which we had already intended to illustrate at some future period. It no doubt represents the opinion of a considerable number of medical men, and possibly of more in foreign countries than at home. We do not take upon ourselves to express a judgment on the matter until we have investigated it by the aid of numerous cases, but we may state *in limine* that we have always entertained a diametrically opposite view of the question; and that our belief is that, almost without exception, *a constitutional cause is the mainspring of every local affection.*† We would not for a moment wish to detract from the special jurisdiction of the tissues, but we believe that they are incompetent to evil in the absence of a failure of power in the constitutional government.

The detection of a *causa morbi* by medical examination of the appearance of the skin, the functions of the body, and the history of the patient, often undoubtedly presents considerable difficulties. The patient declares himself to be well; the physician can detect nothing wrong. But are we therefore to conclude that there is really nothing wrong? We think not; it may be that all that is wrong is, so to speak, occupied with the local affection, and, therefore, does not manifest itself in the central organs of the body, or in the functions. Or, it may be, that the only apparent sign of deranged health is a defect of cheerfulness

* JOURNAL OF CUTANEOUS MEDICINE, vol. i. page 411.

† We must not be supposed to refer to local affections produced by external causes; but to local affections originating without apparent external cause.

or activity, conditions of which the physician has no means of judging correctly; or it may be some tint of the complexion, some defect of brightness or colour of the eye, or of freshness of the features or lips. But we have promised to abstain from speculation in the abstract, and we will only say that with the conviction of a general disorder, a general principle of treatment is usually so successful in our hands that we could not conscientiously abstain from the practice.

Within a few minutes of the receipt of Dr. Laycock's letter, a patient presented himself, who gave the following account of his health:—He was aged 31, a Sussex farmer; he had ekzema with swelling of the lips, chiefly the upper; redness, with some degree of swelling of the mucous lining of the mouth and gums; ekzema, with slight thickening of the eyelids; and slight ekzema of the perineum. The eruption had been in existence for three months, sometimes was watery, and sometimes itchy. For three years previously he had been teased with boils, which appeared usually in the spring season of the year; but he had had no boils since the eruption had made its appearance. He had had no previous illness since he suffered from scarlatina in childhood. As regards his present health, he reports himself as thoroughly well, without pain or ache; his appetite good, digestion easy, bowels regular; no derangement of function of the kidneys; good rest at night, no lassitude or deficiency of activity, spirits good. Here, then, is an example such as Dr. Laycock refers to local disease without constitutional disorder, with what would pass as a thoroughly good state of health.

Let us apply the test of special medical tact: he is paler than comports with our idea of the standard of health, particularly the conjunctivæ; he is somewhat sallow; his tongue is a trifle too red, there is

a brownish slime near its root; and he confesses to a bitter taste in the mouth occasionally, on waking. In a word, there is evidence of imperfection of digestion, and this we accept as our indication for treatment. Probably if it were not for the derivative operation of the ekzema, the dyspepsia would have been even more decided. We look upon it that in this case there was a *causa morbi*, originating probably in deficient power of the digestive function; that the furunculi were the first expression of the existing debility; the ekzema its subsequent manifestation. Therapeutically we conclude that a moderate increase of function of the alimentary canal, producing waste, may give rise to a greater demand for supply, and consequently increase the energy of action of the nutritive functions; and we hope and do not doubt to secure this result by a compound rhubarb pill at bedtime every night, with ten minims of dilute nitro-hydrochloric acid combined with a drachm and a half of compound tincture of gentian twice in the day. Locally we prescribed the benzoated ointment of oxide of zinc.

Our next patient, also aged 31, was in appearance the very ideal of robust health; ruddy and hearty; not too bulky; and temperate in his habits. His malady is a dry and scaly ekzema of the scalp; ichorous ekzema behind the ears, and a few circumscribed blotches of papular ekzema on his arms. In him the eruption is diathetic and hereditary; his mother suffered from ekzema behind the ears, and as a boy he had ekzema furfuraceum of the scalp, otherwise pityriasis. During the past summer he was annoyed for six weeks with boils in one axilla, and down the inside of the arm.

The eruption in this patient is a degree more severe than that of the former; the symptoms of disorder of the general health were also a degree more intense; nevertheless, he would pass with many as being, with the exception of the eruption,

in excellent health. He has suffered from slight dyspepsia for three years; considers himself bilious; is occasionally fickle in appetite; sometimes a little depressed in spirits; and in the evening, when he occupies a warm room, or a warm bed, there is some itching of his skin. Nevertheless, his tongue is clean, bowels regular, and other functions regularly and well performed. How different might have been the report were it not for the derivative operation of the ekzema! Our treatment in this was the same as in the preceding case, with the addition of a pomade for the head, consisting of one part of the nitric oxide of mercury ointment to three of benzoated lard.

We may note in connection with these cases that the association of furunculus and ekzema, and we may add dyspepsia, is among the commonest of dermatopathic phenomena; and, in no less degree, the derivative relationship that seems to subsist between the three affections.

SUCCESSION OF DISEASE.

Our Clinicle Circle was visited in March, 1868 (12th), by a citizen of London, a clothier, aged 44, having his house of business in the City, and his country house at Stamford Hill. His special complaint was a diffused annulus of ekzema squamosum seated on the side of the neck, which he thought might have been "caught" from two of his boys who had had ringworm; and the more so as a ring had existed on the arm of his wife. There prevailed in his mind the usual unreasoning confusion of cause and effect, of idiopathic and contagious, which we commonly meet with in the world in association with these events.

On examination, we found ekzema squamosum of the scalp of three months' duration; and on expressing some surprise that he had not applied for

treatment for the greater evil in preference to the lesser, we were met by the remark that he had "never felt better in his life than since the breaking out of the ekzema on his head," and that it was the apprehension of ringworm alone which had induced him to seek our assistance.

His medical history, which is that of a great number of similar patients, was as follows:—Towards the latter end of November he had suffered from a large boil on the nape of the neck; the boil was poulticed, and the depressing action of the poultice on the skin had set up an ekzema, which soon spread to his head and had now assumed a chronic character.

It needed some reasoning to prove to him that close application to business in an unwholesome atmosphere had lowered his vital power.

He attributed to increasing age that which was the simple consequence of these causes; he had been less vigorous than formerly; listless and somewhat irritable; and upon these symptoms, so important to the medical observer, although frequently, as in this case, overlooked by the patient, the boil had succeeded. The *causa morbi* was developed primarily in the shape of a boil; the boil was followed by ekzema; and then the patient became aware that his inward feelings of health were improved.

This was just one of those cases in which an unobservant practitioner might have been led to believe that the constitutional health was perfect, and that the affection was simply local. But the evidence was before him that the ekzema had exerted a derivative action on the general economy; and that now it became his business to charm away the ekzema, without bringing down a *contrecoup* on the general health. His appliances must be derivative, tonic, and if necessary neurotonic.

CUTANEOUS SYMPATHIES.

6570. A delicate lad, aged 11, has ekzema of the edges of the eyelids, psorophthalmia, attended with a constant exudation of ichorous and puriform matter. This has lasted for four months, and has occasioned the loss of the eyelashes. A year back he had an ulcer of the leg; the ulcer was followed by a septic abscess in the thigh of the same leg, and later on by impetigo phlyktænodes around the mouth.

PROPAGATED IRRITATION.

A married woman, aged 32, has an ekthymatous eruption on the back of the neck and on the fingers of the right hand, and a phlegmon of the first joint of the forefinger. She has been married eleven years and has two children; the youngest nearly four years old. She has always been healthy; but was very much exhausted by her confinements, taking a year to recover her strength in each instance. Moreover, she has worked hard, has had her share of anxieties, and has lived somewhat too abstemiously; but has never before suffered from a cutaneous complaint of any kind.

A month back, a heavy piece of meat fell on her right hand, the bone tore the skin just over the metacarpo-phalangeal joint of the index finger. She applied the universal cure of the ignorant, tincture of arnica. As a result of the operation of the two-fold irritant, the wound and the arnica together, the part became inflamed, remained painful and swollen for a long time, and has only recently healed, leaving a red and somewhat infiltrated cicatrix.

About a week after the occurrence of the wound, some half-dozen ekthymatous papules, subsequently maturing into pustules, made their appearance around the nape of her neck; one of the ekthymata,

of larger dimensions than the rest, assuming an anthrakoid character. And more recently, and within the last few days, a deep-seated phlegmon has taken possession of the soft parts upon the radial side of the first phalanx of the index finger at a short distance from the original wound, and has produced swelling and tension of that finger, of the neighbouring part of the hand, and, in a less degree, of the rest of the fingers. On the dorsum of the first phalanx of the three remaining fingers, there is an angry ekthymatous pustule upon each, and on the palmar side of the same phalanx of the ring finger a bulla filled with serous fluid as big as the hemisphere of a large pea. There are besides, an ekthymatous pustule on the right upper arm, another on the left upper arm, and a few red papulæ on the upper part of the chest, more particularly at the right side.

Now, the interest attaching to this case centres in the relations subsisting between the wound of the hand and the subsequent development of an ekthymatous and anthrakoid eruption, together with a deep-seated phlegmon. It may be asked—First, why did not the trifling wound heal at once? Secondly, what proof have we of the dependence of the eruption and phlegmon upon the original wound? and, Thirdly, admitting this dependence, how is it to be explained? The case is a trivial one, but the issues are important, and all the more important because the case is a homely one, and therefore one that is common and of frequent occurrence. And the issue is important because the reasoning applicable to the explanation of this simple case is applicable also to the most complex and most severe that can be brought before us; and we are consequently led by a parallelism of reasoning from the most simple upwards to the most difficult and obscure.

Let us endeavour to answer these questions in succession. The original wound did not heal kindly and at once, for two reasons; in the first place, in

consequence of exhaustion of constitutional nerve-power from insufficient diet, prolonged labour, and mental anxiety; and, secondly, from the immediate and injudicious application of a recognized irritant of the skin, namely, tincture of arnica. It might be supposed that we should accuse the bone or the meat of poisonous qualities, and suspect the presence of some septic principle; but we see no reason for such a line of argument. We believe the local irritation alone to have been perfectly equal to the causation of the irritability and of the sluggish reparation of the wound.

Secondly, we infer that the remote cutaneous affection, namely, the ekthyma, the anthrakoid manifestation, and the bulla, as also the deep-seated phlegmon, were the secondary effects of the original wound, because such consequences have been frequently observed; because they occupied the same side of the body as the traumatic lesion; and because, in the instance of the hand, they may be said to have been in almost direct communication with it. Not that this latter fact is of much value, because we know the nerves to possess the power of the electric wire of bridging over space, and bringing the most distant regions into communication. In this way we explain the production of the ekthymata upon the back of the neck, and also the occurrence of one pustule on the upper arm of the opposite side of the body.

As to the third proposition, namely, the explanation of the dependence of the secondary phenomena upon the primary injury, we are not prepared to adopt a popular idea that the wound may have been poisoned—poisoned by the meat or poisoned by the bone; in fact, inoculated with a septic poison; and that the poison was conveyed by the blood into the system. But, on the contrary, we would suggest an explanation which we fully believe, and one which is founded on the recent researches of Andrew Clark, of Burdon Sanderson, and Wilson Fox, namely, the propagation of an abnormal cell-nutrition from the

wounded part to the seat of the secondary phenomena. In the experiments of these observers the nosogenetic process was propagated from the seat of injury to the central organs of the body. In the instance before us the secondary processes on the wounded hand were effected in a similar manner; and we think it not improbable that the local nervous system may also have taken part in the propagation, in the instance of the eruption developed on the back of the neck. The idea of a morbidly active cell-nutrition in no way, in my opinion, invalidates the supposition that the nerves may also be the means of diffusion of the morbid process by the propagation of a sympathetic impulse. It may, in fact, be a reflex operation, developing in a distant organ a function identical with that existing in the part from which the nerve influence springs.

We are aware that the question may be asked, has not pyæmia a share in the process? And to this question we should unhesitatingly answer in the negative. We will not deny pyæmia, by which we mean the transport of pus elements from the morbid to the distant part, entirely; but we believe that many phenomena are ascribed to pyæmia and to septic influence, which are in reality nothing more than the propagation of an irritation, to use an old form of expression; or, to speak more in consonance with modern views, the propagation of an exaggerated cell-nutrition and cell-proliferation. Two cases of death, apparently from disease of the lungs, after the simple operation for the removal of the whole or of a part of a diseased breast, have lately come before us, in which the secondary disorder was explained upon the hypothesis of pyæmia; but in both of these instances we were led to doubt the fact, and for many reasons are much more willing to credit the theory of a direct propagation of a morbid process from the seat of injury to the neighbouring deeply-seated organs.

ON LOCAL IRRITATION AS A CAUSE OF CUTANEOUS AND GLANDULAR DISEASE.

In the presence of the modern theory of cell-pathology, the following case may prove interesting to our readers, and probably conduce to further investigation. A delicate boy, aged 6, of weakly nutritive power, and endowed with an unusually sensitive skin, was bitten on the cheek by a young dog. The bite was not severe, and drew blood at one point only, where the canine tooth abraded the skin. The boy was teasing the dog while the latter was feeding; the dog was healthy, and the bite a mere admonition to the little tyrant to "be quiet." The wound was sucked by the child's father, and afterwards touched with some caustic application, and now remains an angry papule.

A week or ten days after the accident, six small patches of impetigo made their appearance on the cheek around the bite, and within the radius of an inch. By impetigo, in this instance, is meant small oblong patches of red and infiltrated skin, surmounted by vesico-pustules, slowly spreading by their circumference. The largest of these patches measured half an inch long by a quarter of an inch in breadth; and five weeks after the bite, when we first saw the boy, some of the patches were red and smooth, some still bore evidence of their previous vesico-pustulous condition, and others were coated with the brown crust of a desiccated secretion. Moreover, he had similar impetiginous blotches of more recent development on the buttocks and thighs.

Concurrently with the appearance of the impetigo, or very shortly after, the cervical lymphatic glands at the angle of the jaw began to enlarge, and a sub-maxillary gland became prominent beneath the chin. Here the mischief appeared to end; we could dis-

cover no swelling of the concatenate glands lower in the neck, and believe that they will escape.

One word more in reference to the medical history of our little patient. A year ago he was brought to us suffering under ekzema of the flexures of the elbows and hams. The eruption first appeared at the age of sixteen months, and therefore may be ascribed to dentition as its exciting cause. It got well quickly under the use of Fowler's solution and zinc-ointment, and has not shown itself since, and he has been well up to the period of the accident above referred to. It may be mentioned, also, that his skin is unusually sensitive—a flea will produce considerable irritation of the integument—and his mother is prohibited from using, in his case, liniments and applications that she would employ for the other children. We therefore find illustrated, in this little fellow, that which we should call an *ekzematous diathesis*, but what our Parisian colleagues Bazin and Hardy would possibly denominate a *herpetic diathesis*.

It can hardly be questioned that in this case there is evidence of the impetigo being a consequence of the bite, and that the same irritating cause gave rise to the enlargement of the lymphatic glands. The hypertrophy of the glands has now continued for a month, and there is reason to hope that it will subside by degrees. Should such be the fact, the case will resolve itself into one of simple enlargement of lymphatic glands in association with a traumatic irritation of the skin, a not unfrequent combination. But let us suppose that the glands, instead of diminishing in size, should increase, and that others should take up a similar morbid action, the case will then become one of scrofula; and the predisposing elements of scrofula are not far distant: the boy is slightly anæmic, his nervous system is susceptible—even irritable—and his nutritive powers are weak. Should such a consummation occur,—and there are

many more unlikely, we should have before us a case of scrofula induced by the bite of a dog.

Can we doubt that, if the opportunity were given us of dissecting the tissues involved in the morbid process in this case, we should meet with the granulations, the bands, the retrograde regeneration of tissues, so clearly described in the late investigations into the phenomena of the inoculation of foreign matter by the skin or the insertion of foreign substances beneath the integument. And the question arises, may not the irritation caused by the bite of the dog in this instance, instead of being arrested in the lymphatic glands, run on in the course of the lymphatic vessels, and so reach the bronchial glands and the lungs?—in a word, set up the process of altered nutritive function that constitutes tubercle and issues in consumption?

These are reflections that force themselves into our thoughts in the consideration of this kind of affection, that, although local in its origin, has a tendency to spread and to diffuse morbid action in every direction, and they suggest the suspicion that the distinctions between scrofulosis and tuberculosis are not so strongly defined as we are taught to believe, and that a scrofula may, in certain cases, be in reality a localized and aborted tuberculosis.

TRAUMATIC EKZEMA.—A gentleman, aged 22, a fine robust man, a rifle volunteer, was engaged at the shooting match at Wimbledon, on Thursday, July 2nd, 1863. His gun, which was a "kicker," recoiled with some violence after each discharge, and the result was a bruise of the integument and soft parts in front of the right shoulder, and of the lower part of the forearm on the same side. His captain prescribed for him the use of tincture of arnica, and in the evening he rubbed the bruised skin vigorously with this tincture. The remedy, and its somewhat rough application, caused erythema of the skin, followed five days after by an acute attack of ekzema,

ekzema vesiculosum et ichorosum. On the seventh day from the application of the arnica and the second from the invasion of the ekzema, he commenced treating the eruption with water-dressing. On the ninth day of the eruption he presented himself before us; the whole of the front of the shoulder was of a deep red colour, and a streak down the side showed the direction of a stream of the tincture that had flowed beyond the limit intended for its use. The tint of redness was dull, the skin looked sodden, and the softened cuticle gave a greyish colour to the surface. The limit of the ekzema was abrupt, but beyond this, and extending over the whole of the right side of the chest, was a moderately abundant crop of pimples of ekzema papulosum seu leichenodes, the pimples being large and of a dull red colour, and more numerous near the ekzema than at a distance from the focus of the disease. The same description applied to the eruption on the forearm. His chief complaint was as to the abundance of the discharge, and to the bad odour which it emitted; and he further complained that the eruption was breaking out over all parts of his skin; that he had a patch on the scrotum; a papular eruption on both thighs; even on the head and face and hands pimples had appeared. The new eruption, he said, was preceded by itching, and that wherever he scratched an eruption seemed to follow.

There was no disturbance of his general health; the weather had been extremely hot on the day of shooting, but he had not suffered from it; and as far as health was concerned, he felt no inconvenience at the time of consulting us. And, indeed, with the exception of a little whiteness of the tongue, and muddiness of the complexion, we could discover no signs of sympathetic disorder in the economy.

This case is interesting, and unusually free from complication. The subject, a young man in robust health; the primary injury, a bruise of the soft parts,

of a very simple and obvious kind; the result of this injury, as a matter of course, a lowered tone and vitality of the tissues. Next we have an irritant, the tincture of arnica, used irritatingly to the injured part; and then the revulsion, a well-developed eruption of ekzema vesiculosum et ichorosum; on the less injured circumference, its papular variety, ekzema papulosum.

But a still more interesting series of pathological actions begins from this point; the irritation excited in the injured part is propagated by the injured nerves to other cutaneous nerves at a distance; the mechanism of reflex nervous function is set in motion; and papular and vesicular eruption, with pruritus, are developed on parts of the body at a considerable distance from the original focus of irritation.

Our patient, who was clearly deeply imbued with humoural pathology, remarked, "The arnica has evidently poisoned the blood, and the poisoned blood is producing breakings-out over the whole skin." We made no remark, for we remembered that the time had been, and that not so very far distant, when we should have reasoned in the same manner ourselves; the hot weather, the heated blood, then disturbed nutrition, mal-assimilation, and elimination of the mal-assimilated products.

The irritant effects of tincture of arnica have been noticed by Professor Galassi, of Rome, who reports in the *Giornale Medico di Roma*, three cases out of many of a similar kind observed by himself, and five cases communicated by Dr. Mozzoni. The principal symptoms of the eruption are, slightly elevated red puncta, which are quickly converted into very minute, middle-sized vesicles, similar to those produced by croton-oil, swelling and burning heat, and the spreading to surrounding parts. We should have no hesitation in calling this eruption an ekzema; but it is termed by Galassi, erysipelas vesiculare.

EKZEMA TRAUMATICUM.

A tradesman, aged 66, residing in the country and enjoying good average health, bruised the outer ankle of his right leg sixteen years back. The bruise got well with the use of a poultice, but as some ekzematous irritation appeared in the circumference of the bruise, he applied a water-dressing. By degrees the irritation spread onwards, and ascended the leg to above its middle; and has continued, with intervals of cure of a few months' duration, from that time until this. He has no ekzema on any other part of his body, and none on the opposite leg. His only other complaint is hæmorrhoids, which, he says, alternate with his ekzema. For the last few weeks he has been treating the ekzematous leg with water-dressing, and with the usual mischievous result. It is intensely red and tumid; the cuticle thin and shining, abraded here and there; there is watery exudation at a few points; the central part of the inflamed skin is somewhat indurated; below, it is dry and squamous; above, at its upper border, is a raised and papular margin, and above this margin a few scattered papulæ, highly irritable; and some with summits torn off by the nails.

EKZEMATOUS ASTHMA.

The association of bronchial ekzema with cutaneous ekzema, as in the instance of ekzema infantile, is one of the commonest phenomena of that disease; the *causa morbi* is one and the same for both, the pathological manifestations only differ in the differences which naturally appertain to the mucous membrane in comparison with the skin; and just as in the ordinary process of cure of ekzema, one part of the surface recovers its normal state sooner than another, or, having recovered, is liable to relapse, so in its

relation to the mucous membrane, the morbid state of the latter may alternate with the former; the affection of the mucous membrane may for the time being become the most serious feature of the disease; or, the skin being well, the ekzematous irritation of the bronchial membrane may still be kept up and give rise to that impediment of respiration which is termed asthma. This is no case of transference from the exterior to the interior; no case of "driving in," although the interior may be at its worst while the exterior is better; but a simple pathogenetic action of one or more parts of that surface which is normally exposed to the action of the atmosphere, whether internal or external. And the unity of the disease is further shown by the yielding of the symptoms in both instances to the same principle of treatment.

Every one who is at all conversant with the mode of manifestation of cutaneous disease must have seen this combination of endermic with exodermic ekzema over and over again, while every consideration of structure and physiology predicates the possibility of such an occurrence. In a paper on ekzema infantile, read before the British Medical Association, in July, 1856, we remarked, "Not unfrequently in ekzema infantile, the mucous membrane of the mouth and nose, of the air-tubes and lungs, and of the alimentary canal, participates in the disease, and is either affected simultaneously with the skin or takes a vicarious part. The affection of the alimentary canal gives rise to diarrhoea and the production of mucus in large quantities and sometimes of coagulated lymph. The affection of the mucous membrane of the mouth and nose is shown by redness, sometimes aphthæ and augmented secretion; and the ekzematous congestion of the mucous membrane of the air-tubes produces bronchitis in various degrees, accompanied with hoarseness, from thickening of the mucous lining of the larynx, and an excessive accu-

mulation of phlegm throughout the lungs. The latter symptom is one which is calculated to give some anxiety, and requires dexterous management, but it is less severe than common bronchitis, and often as sudden in getting well, as in its attack. When the mucous membrane of the mouth and passages is affected, hoarseness is a conspicuous and striking feature of the complaint; the hoarse cry is unmistakable, and is sometimes the first and only sign of the congestion of the mucous membrane. It is a sign as diagnostic of congestion of the respiratory mucous membrane, as is whiteness of the eye in general anæmia."

Ekzema we believe to be always curable; but when neglected it is apt to grow into a chronic and sometimes an inveterate state. It is a disease that should always be cured as quickly as practicable, for its continuance merges by degrees into a habit, and lays the foundation of a diathesis; the dread of curing ekzema is one of the follies of a past age, and cannot be too strongly reprehended; and the fiddle-fad of the pill-box literature that warns us against cure, is simply contemptible. But when ekzema does become chronic, it produces two remarkable changes in the economy, namely, a chronic thickening of the mucous membrane of the air-tubes, manifested by obstructed respiration or asthma, and a chronic duration, dryness, and roughness of the skin, amounting in some instances to xeroderma. Sometimes both these states are present at the same time, sometimes one only; but it is rare that one or other exists without a corresponding affection of the other, either permanently or separately. Under these circumstances, the terms ekzematous asthma and ekzematous xeroderma are strictly applicable and practically expressive. Ekzematous asthma has two periods, that of the active stage of the disease, and that of the chronic stage of the disease; and these stages must be borne in mind in treating it pathologically and therapeutically.

EKZEMA WITH FURUNCULOSIS.

Dermopathists will doubtless agree with us that there exists no more frequent complication of ekzema than furunculus. We will, nevertheless, throw a few observations together, in order to illustrate the fact, and probably serve as a text for future consideration. A medical man in Devonshire writes to us as follows:—"I am forty-nine years of age, always temperate, my usual stimulant not exceeding two glasses of sherry a day, and I work hard. About a month since I had a boil over my right eyebrow, and within a few days ekzema appeared in my left groin, and thence extended to the scrotum and penis; the itching and smarting are most distressing. I have since had another boil on the scrotum, and one is now coming on the right clavicle." Our friend proves himself to be no disciple of ours, although ready to call for help when in need, for he says: "I took a five-grain calomel pill, mistura sennæ, and salines for about a week; I then began liquor arsenicalis, five minims, three times a day, and continued it until my stomach rebelled and my tongue became coated and disagreeable, &c. I have taken no spirit, wine, beer, or coffee." To all of which our reply was,—“Ekzema is a disease of debility, and so also is furunculus. Live well; take beer or wine, as you prefer, and five grains of citrate of iron and quinine twice a day.” While we were penning the above case, a mother took a seat before us with a child on her lap, suffering from ekzema figuratum of the cheeks and dispersed over the trunk. The child was six months old; at three months she was vaccinated, and the vaccination took well; the child then had a cold, and camphorated oil was rubbed into its chest; the friction and oil proved an irritant, and ekzema became developed. She had likewise several small boils on various parts of the body, generally one at

a time. The mother had been subject to boils occurring chiefly in the axilla; she had one when the infant was four months old, and has had one or two since.

ILLUSTRATIONS OF CAUSATION.

7550. A gentleman, aged 64, has ekzema of the pudendum and thighs, which has lasted for four months; it was excited by a chill after getting hot with exercise in the month of August.

7597. A married lady, aged 40, has had ekzema squamosum for six years; it was attributed by her medical adviser to drinking unwholesome water.

7601. A lady, aged 45, has ekzema squamosum between the fingers; the disease has lasted three months, and arose from the heat and fatigue consequent on a hunt after a lost dog.

7619. A gentleman, aged 35, has ekzema of one leg, which has lasted for nine months. Seven years ago he had a compound comminuted fracture of the tibia, and the leg has been weak ever since. Shortly before the appearance of the ekzema the leg was chilled, erythema with swelling resulted from the chill, then an elastic stocking was had recourse to, which heated the leg and produced first a scurfy condition of the cuticle and then ekzema.

A gentleman, aged 30, of somewhat sensitive temperament, has an attack of ekzema erythematosum of the front of the chest whenever he eats rice. A friend of his suffers in a similar manner. Urticaria after eating rice is not uncommon, but we have never before met with an instance in which ekzema was produced by that means.

7357. A gentleman, aged 27, has a patch of

ekzema squamosum on the ball of the thumb, which followed a blow with a cricket-ball five years ago. The present eruption has lasted three months (September), and it has recurred in the hot weather ever since the accident.

7314. A captain in the army, aged 38, has ekzema of the legs and back of the hands, which has existed one month, and was brought out by a course of hydropathic treatment.

7277. A married lady, aged 64, has ekzema of the leg, extending from the knee to the ankle: it has existed for six weeks, and was occasioned by a bruise. Nine years back she had ekzema of the forehead; and three months since ekzema of the great toe. She complains of lassitude and weariness, and her tongue is soft and pale.

7096. A gentleman, aged 67, has ekzema of the right leg below the knee: the eruption has existed for two years. Seven years ago he ruptured some of the muscles of this limb, and the leg has remained weak and swollen ever since. The injury to the limb we regard as the predisposing cause of the ekzema.

7830. A maiden lady, aged 48, has ekzema squamosum nuchæ, a patch of moderate extent, which has existed for four years. She has had similar attacks previously. She attributes the eruption to affliction and mental anxiety, and also suffers from headaches.

7167. A gentleman, aged 51, has ekzema of the hands, chin, and in the groove of the nates, from which he has suffered for four years. He is a man of nervous temperament, an engineer by profession, and has been much overworked.

7155. A merchant, aged 33, has ekzema digitorum, which has existed for two years: at present he has ekzema behind the ears, and in small circumscribed

spots dispersed over various parts of the body. His feet swell in winter. This state of disorder of his health would seem to be attributable to change from an outdoor life, with anxious occupation. He states that he is never free from mental pressure.

7257. A clergyman, aged 54, has ekzema of the hands. The disease has existed for eleven years, but was lately very much aggravated by fright and a severe run, on an occasion when he was attacked by highwaymen. He has worked laboriously both mentally and physically for thirty years, having had under his charge an important congregation.

7175. A gentleman, aged 21, has ekzema perinei and three annulate patches on the right thigh. The eruption has existed for one week, and succeeded an extremely heated state of the body, followed by a chill. He was playing cricket on a Thursday in July, and the ekzema made its appearance on the Saturday.

7235. An elderly lady, aged 72, has ekzema of the hands, which has been more than usually troublesome for the last month (August). She has suffered for a long period from ekzema, which usually makes its attack at the spring and fall of the year. She is besides somewhat gouty.

7229. A gentleman, aged 68, has ekzema of the thighs, hands, face, and behind the ears. The attack broke out in the month of June.

7087. A young lady, aged 16, has ekzema in small circumscribed patches on the hands and forehead, and vestiges of the same affection in the flexures of the joints. The disease began in the joints at the age of seven, and has recurred in the summer season ever since. She has pale conjunctivæ, and is delicate in constitution.

6782. A little boy, aged 10, has ekzema erythematosum, which has broken out as a spring erup-

tion chiefly on the legs, and has already existed for a few weeks. His digestive functions are deranged, his appetite variable, and he has copious perspirations at night.

7023. A married lady, aged 23, has a patch of ekzema squamosum on the side of the neck. She has no other manifestation of the eruption. She is delicate, dyspeptic, and has given birth to five children.

7372. A lady, aged 41, has ekzema of the hands and feet, with œdema. She is much debilitated, and owes her exhaustion to prolonged nursing and anxiety.

7375. A lady, aged 26, has had ekzema squamosum capitis for some weeks. Nine months back she had abscess of the breast after her confinement, and to the debility resulting from these causes the ekzema is to be attributed.

7378. A young man, aged 27, has ekzema squamosum of the head and front of the chest: it has existed for four years, and is worse in the winter season. He is a druggist's assistant, and much confined by his duties.

6330. A male infant, aged three months, was attacked with ekzema at the end of the first month. The eruption covers the whole body. It is ichorous on the head and face, erythematous and papulous on the body and limbs. The mother received a fright when she was six months pregnant; and our presumption is, that in consequence of this shock to the nervous system, caused by the fright, the nutritive quality of her milk has suffered, and the defective nutrition of the infant has become the predisposing cause of ekzema; cold possibly being the exciting cause.

6114. A lad, aged 16, has ekzema pustulosum or impetigo of the scalp and ears, which has been in

existence two months. He is a weakly, languid boy, pallid and overgrown, and has just left school to enter upon the duties of a merchant's office. These are conditions in the highest degree favourable to the development of a pyogenic ekzema.

6555. A young lady, aged 6, has ekzema pustulosum of the scalp (*impetigo capitis*): it ensued upon the debility occasioned by a succession of exhausting causes: namely, insufficient diet, low fever, and whooping cough.

6495. A clergyman, aged 58, is suffering from ekzema of the forehead, chin, fingers, and perineum. He has been subject to this affection for twelve years; it recurs in spring and autumn, and on the present occasion (April 4th) has lasted for three months, having been preceded by lumbago. He is an habitual dyspeptic, and certain simple articles of food, such as bacon and oranges, produce vertigo.

6222. A gentleman, aged 52, has ekzema erythemosum in moderate-sized patches (*figuratum*) dispersed over the front of the forearms. He is not liable to eruptions, and the present attack is attributable to the cold weather, and has existed for three weeks. As this is not a case of diathesis or of inveterate character, arsenic is not indicated, and we have prescribed nitromuriatic acid with gentian, a mild aperient pill, and the benzoated ointment of oxide of zinc.

6403. A lady, aged 31, has suffered from ekzema of the hands for twenty years: it is worst in the summer season. Her tongue and mucous membrane are pale and soft.

6404. An unmarried lady, aged 28, has suffered from ekzema squamosum of the knuckles of the fingers for ten years: it is most troublesome in the winter season.

6411. A gentleman aged, 28, has been troubled

with ekzema papulosum of the lower extremities for eighteen years : it is worst in cold weather. He is a nervous, sensitive man, and during his treatment was attacked with severe pain in his side, which was relieved by hæmorrhage from the bowel.

7796. A lady, aged 55, has been the subject of ekzema for ten years : it occurs on the back of the hands, ekzema papulosum (*leichen agrius* of Willan), and comes on usually in hot weather. The present attack made its appearance in the winter.

6474. A gentleman, aged 43, has ekzema of the left leg, and gives the following account of its origin. Three years ago he was troubled with varicose veins of the leg : a cluster of these veins still remains, as well as a mottled melasmic patch resulting from the congestion caused by the obstruction of circulation in the veins. A year later the leg was attacked by boils, for which a poultice was applied, and consequent upon the irritation caused by the poultice, ekzema was developed, which still continues.

6737. An unmarried lady, aged 43, has ekzema squamosum ani : it began as pruritus ani, consequent on hæmorrhoids, and has lasted for five years.

6701. A young lady, aged 22, has ekzema erythematosum of the face, which has existed for two years : it originated from exposure to the sun. She has been subject to neuralgia for eight years, and is at present suffering from ascarides, which invade the vulva as well as the rectum.

6669. A military officer, aged 42, is suffering under ekzema ani, excited by sitting on a damp seat in a railway carriage. He possesses an ekzematous diathesis, and is subject to frequent attacks of that disease, the attacks alternating with furunculosis.

6694. A young lady, aged 10, has ekzema of the

lobe of one ear, excited by piercing the ear for earrings.

6556. A gentleman, aged 64, is suffering from ekzema pustulosum of one leg: it followed phlegmonous erysipelas, and its treatment, which he had experienced four months before.

6563. A gentleman, aged 68, has ekzema squamosum of the left leg extending from the toes to the knee: it has been in existence six months, and was excited by poulticing the leg for six weeks after the bite of a dog.

6099. A young lady, aged 15, has ekzema erythematosum of the palm of the hands, with fission in the lines of motion, the borders of the latter being red and the cuticle in a state of desquamation. Flexion and extension of the hands is extremely painful. The hands have been in this state for three weeks; and first became inflamed from the use of a solution of soda intended to bleach her hair.

This case reminds us of its analogue, the dermatitis toxica occasioned by the aniline dyes.

6277. A general, aged 63, has ekzema squamosum of one leg, which has existed for nine years. The eruption followed an accident to the leg and its treatment. With proper management we anticipate that the disease, although of such lengthened duration, will get well in a few weeks.

7714. A lady, aged 41, has ekzema of the knuckles and back of the hands: it has existed for eighteen months; it began in the summer, and is more active in the summer than in the winter season.

7720. A nursemaid, aged 19, has ekzema pustulosum of the arm in the neighbourhood of the elbow. She had some slight annular eruption on the elbow, for which a poultice was applied, and the ekzema followed. She is weakly and delicate, and has been underfed.

7727. A gentleman, aged 22, has ekzema on the right hand: it has lasted for three months, and came out suddenly, together with a similar eruption in the face, in consequence of sleeping in a damp bed. He is congenitally ekzematous.

7748. A gentleman, aged 59, has a patch of ekzema papulosum on the front of the shin; the eruption followed a bruise caused by a blow.

7706. A gentleman, aged 31, has ekzema papulosum of the head, whiskers, shoulders, and chest; it has existed for four months, and broke out in the autumn after some days of confinement in a hot room.

7673. A gentleman, aged 56, has ekzema labiorum, which has teased him for two years: he is depressed in spirits and under the pressure of anxiety.

7639. A married lady, aged 40, has ekzema vesiculosum of the back of one hand, which is spreading upwards to her wrist. The eruption is only three days old, and was excited by the use of tincture of arnica applied for the relief of a sprained thumb. She made the application on a Sunday evening and kept it on all night; on Monday night the ekzema made its appearance. Her skin is very sensitive, and she was unable to bear the oxide of zinc ointment; but the eruption gave way to the use of starch powder.

CONGENITAL EKZEMA.

6752. A young lady, aged 18, has been the subject of ekzema since the age of six weeks. The eruption makes its attack in the winter season, and at present occupies the head, the eyelids, and the ears. She was brought up by hand.

6753. A young gentleman, aged 16, is troubled with ekzema vesiculosum and squamosum of his

fingers. He was attacked with ekzema at the third month, and has suffered from it more or less ever since. A state of constitutional debility is further indicated by enlarged tonsils.

6560. A little boy, aged 3 years, has suffered from ekzema since he was two weeks old. At present the disease lingers in the flexures of his popliteal and elbow joints, and also in his right hand. He has a habit of sucking his thumb, and the saliva dribbles from his mouth and runs down to his chin. This constant moisture has acted as an irritant to the skin, and along its course ekzema is developed, but the thumb has escaped.

6667. A male infant, aged 3 months, has a mild attack of ekzema, the eruption being situated on one side of the head and face, on the shoulders, the sides of the trunk, and in the popliteal space. The chief point of interest in the case is that vaccination has failed on two occasions.

6793. A gentleman, aged 72, is suffering from ekzema, which is dispersed on various parts of the body; it presents the squamous type, and he has suffered, he says, from ekzema from his infancy.

6513. A lady, aged 50, is at present suffering from ekzema of the head and of the fissures of the ears. She has been ekzematosus from childhood.

6525. A medical man, aged 48, has suffered from hereditary ekzema since his infancy. At the present time (April) his head and face are covered with ekzema squamosum, and he is teased with intense itching arising from ekzema ani.

6202. A gentleman, aged 42, had ekzema in his infancy, and has been troubled with it from time to time ever since. At present (February), and brought on by the cold weather, he has ekzema squamosum fissum et ichorosum of the hands, and several other parts of the body, particularly the popliteal cavity.

This is a case in which the alternate use of local stimulation and soothing applications is of value, and the internal administration of the arsenical solution, four minims three times a day.

6272. A gentleman, aged 46, is suffering from ekzema squamosum of the head and behind the ears. In the latter situation, as is usual, the eruption is accompanied with a little ichorous exudation and considerable pruritus. He is a hale, strong man, but has been ekzematous from childhood.

6280. A married lady, aged 32, has ekzema squamosum of the head and upper half of the body. Menstruation is deficient, and she has no family, but is otherwise in good health. Ekzema first made its appearance a week after her birth. Her mother was a delicate woman, but of seven children our patient is the only one afflicted with this disease.

6401. A physician, aged 32, has ekzema capitis, also of the fissuræ aurium, axillæ, and groins. He has suffered from the disease since childhood, but has been worse during the last three years. His head is the region chiefly affected, and it is only during the last three months that the disease has extended to the groove behind the ears.

7224. A young gentleman, aged 13, has ekzema palmare of one hand, the remains of ekzema infantile.

7239. A young medical man, aged 24, has ekzema squamosum of the forehead and ekzema papulosum on the limbs; he also suffers from asthma. The eruption made its appearance first immediately after vaccination.

7241. An unmarried lady, aged 66, has ekzema of the ears, pudendum, and joints. The disease began immediately after inoculation for small-pox; and her father, who entertained a prejudice against vaccination, common in those days, accused the

medical man of using vaccine lymph. A few days after her first visit, in the month of December, she suffered from profuse discharge of mucus from the nose. On her neck she has a crop of akrochordal papules—a common accompaniment of age.

7243. A young lady, aged 18, has ekzema faciei which has troubled her for two years; formerly she used to suffer with ekzema articularum. In infancy she had congenital ekzema.

7276. An unmarried lady, aged 36, has ekzema squamosum of the scalp. She has been ekzematous from infancy, had scarlatina at the age of eleven, and a severe attack of ekzema ichorosum at twenty.

7368. A gentleman, aged 32, has ekzema of the right leg; it has troubled him for six months. He was the subject of congenital ekzema in infancy.

HEREDITARY EKZEMA.

7591. A married lady, aged 37, has had ekzema of the palm of the hands and fingers, with rhagades at the tips of the latter, for three months. She has suffered from ekzema for fourteen years, and in infancy she had the diathesis from her mother.

7589. A gentleman, aged 35, has ekzema pustulosum of the fingers which has lasted two weeks; he has been troubled with circumscribed patches on the fingers and hands for two years. The disease is hereditary, his father having suffered similarly, and also a brother.

6747. A child, aged 6 months, is suffering from ekzema pustulosum, which began at the fifth month. The father of the child is ekzematous, the mother is healthy; of eight children, the fruit of the marriage of one has ekzema capitis and another is the subject of furunculosis.

6158. A clergyman, aged 40, has been a sufferer from ekzema for six years, and from spring-autumn

or hay-asthma, since the age of eight years. His present attack occupies the hands, and was excited by having his gloves wetted through with snow. He is a man of weakly constitution, is leukæmic, and subject to rheumatism; but all his ailments cease when residing at Brighton, his present dwelling being situated in a low and damp locality. His mother is ekzematous, and his sister has occasional attacks of ekzema of the face.

6163. A young lady, aged 16, has been troubled with ekzema since the age of three years; she now presents herself with the remains of the affection lingering around her mouth, particularly at the commissures, where there are several rhagades.

Her mother, aged 40, consults us at the same time for ekzema ani, and pruritus of the mucous surface of the labia pudendi.

6383. A male child, 4 months old, is afflicted with ekzema; the child has been partly brought up by hand. The mother has ekzema in the fissure behind the ears, and is the subject of hysteria.

6434. A medical man, aged 42, has suffered from ekzema pustulosum of the fingers for sixteen years; it makes its invasion in the spring, and is hereditary; his mother and a sister being also ekzematous. The present attack has given rise to inflammation of the lymphatics of one arm and enlargement of the brachial gland.

7286. A lady, aged 30, has ekzema pustulosum of the fingers; she was confined nine months ago, and since that event has remained languid and weak. The present eruption has lasted one week (August), but she has suffered for several months with ekzema papulosum, also of the fingers. One of her children, a boy, aged 6, has ekzema pustulosum of the ear, cheek, and nostril of one side; this has also lasted a week.

6773. A lady, aged 45, has ekzema sklerosum of the back of one hand; the patch of eruption is thick and dense, and has existed for ten years. Her daughter, aged 27, has ekzema erythematosum, which came on in December, and has lasted for six months.

7679. A gentleman, aged 39, has ekzema squamosum of the palm of both hands, which has lasted one month; some blotches on the legs have existed for six months; his first attack occurred ten years ago, and the eruption has shown itself, "spring and fall," ever since. On the hands and legs the eruption bears a close resemblance to the pityriasis rubra of Devergie. The patient inherits ekzema from his father.

VI.

ANOMALOUS CASES OF EKZEMA AND EKZEMATOUS AFFECTIONS.

DERMATITIS EXFOLIATIVA *seu* EKZEMA EXFOLIATIVUM.*

GENERAL DERMATITIS is sufficiently rare to excite some attention and interest whenever a case of the kind comes under notice. I have already published, in my work "On Diseases of the Skin," two instances of this disease and one of a local form, and I now present to the profession the details of another example of the same affection. Heretofore I have followed the nomenclature of Devergie and Hebra, and have called it "pityriasis rubra"; but, on the present occasion, I have ventured to employ a term which, I believe will convey to the mind a better idea of the nature of the complaint than

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the name given to it by my colleagues, and which, at the same time, is calculated to escape controversy. There may be some doubt as to the true meaning of pityriasis and as to the appropriateness of the application of the name to the disease in question, but there can be none as to the term "dermatitis exfoliativa,"—that is to say, inflammation of the skin accompanied with exfoliation of the epidermis, the inflammation being of an unusually intense kind, and the exfoliation of cuticle profuse, amounting, in fact, to a state of positive flux.

The case which I am about to describe may be briefly stated as follows:—A punctated exanthema, following a shock to the nervous system occasioned by chill, nausea, perspiration, and checked perspiration; the exanthema developed in a few hours, and rapidly diffused, until the whole body presents a bright red colour; excessive heat with soreness and stiffness of surface; well-marked infiltration and condensation of the skin; tendency to crack into fissures on motion; in six or seven days incipient exfoliation of the epidermis in thin laminæ with elongated base; the line of fracture of the cuticle corresponding with the grooves of motion of the skin, and when the laminæ are only partially separated, projecting from the skin in narrow frills sometimes several inches in length. Incessant exfoliation of cuticle, so as to fill the patient's bed with thin laminæ; no pruritus; no exudation; no general perspiration, and but slight partial perspiration from the forehead and back of the hands; tendency to œdema about the ankles; scanty urine loaded with urates; no albumen; pulse quick and excitable; tongue clean; appetite and digestive organs undisturbed, and strength but little affected.

The patient, a young man, aged 28, enjoying average health, and engaged in a brewery, was attacked with ekzema erythematosum, which was developed in small circumscribed patches on his

limbs, chiefly those of the lower extremity. The eruption occurred in the month of May, 1869, the eruptive desquamating and continuing without other change until October. At the latter date he left home with his wife for an afternoon's holiday. The day proved to be wet, and his clothes were saturated with moisture. He stood under an archway waiting for a cab for nearly an hour, and on reaching his home was seized with nausea. He then went into the garden to relieve himself by vomiting, but was unable to do so, and became suffused with perspiration. While in the garden he experienced a chill which he was unable to shake off the whole evening, and he has remained abnormally sensitive to cold ever since. On the following morning it was perceived that his skin was covered with a bright red and punctated exanthema, which in the course of the two following days spread over the whole surface of his body. Nevertheless, the rash was unattended with fever, and did not therefore confine him to his house. The inflammation of the skin, with great redness and excessive heat, lasted without breach of surface for about a week, but after this time the epidermis began to crack and exfoliate, and has continued to do so up to the present time—namely, about six weeks from the beginning of the attack.

On November 20 I saw the patient with Dr. Locock. His face presented the usual remarkable character of this foliaceous form of dermatitis—a deep red hue, with tightening and contraction of the skin, and unusual expansion of the eyelids, which gave to his countenance a staring expression, and, added to this, the white edges of numerous partially separated stripes of epidermis, which marked the forehead and face all over as if it had been tattooed. The ears and nose were deeply red, and looked parched, and there were dark scabs at the root of the pinna and at several points on the helix, produced by the oozing of blood occasioned by his habit of picking at the scales.

From the head down to the feet the same characters prevailed, although in a heightened degree. The skin everywhere exhibited the appearance of tightening and contraction; it was vividly red, covered with loose frills and shreds of epidermis, was hot and parched, and exhaled an unpleasant valerianic smell, while the lower sheet was covered with similar shreds and flakes. The exfoliation of the epidermis was, however, most remarkable on the back, which was covered with small gauze-like shreds, ranged for the most part transversely, the rows being situated at short distances apart. The derma had the appearance of being thinner than ordinary and the grooves of flexion were strongly marked. The only parts of the skin which had escaped the general dermatitis, but those only partially, were the soles of the feet and palms of the hands, the latter being moistened with perspiration. But at a later period the cuticle of the palm was raised by numerous pimples, was hard and stiff, and subsequently exfoliated, as did that of the soles of the feet.

The symptoms accompanying this state were a feeling of burning heat with occasional transient chills, of soreness and stiffness; he had difficulty in opening his mouth when told to put out his tongue, and he dreaded movement, from the fear of cracking his skin. There was no itching, and he had had none from the first.

Constitutionally, his appetite was good, and digestive functions moderately healthfully performed. His tongue was clean, bowels a little confined, and urine normal in appearance and somewhat scanty. He remarked that he was thirsty, and drank a good deal of water; but he was at a loss to understand what became of the fluid. This difficulty is easily explained when the burning heat of the surface of the skin is considered, and the necessarily rapid evaporation of moisture. He slept

well, and the only important symptom of disorder of health that could be discovered was a nervous pulse, ranging in frequency between 105 and 110.

To summarize the chief features concerned in the origin of the disease, we may note the predisposition to ekzema, the wetting through, the shock to the nervous system evinced by nausea; the outburst of perspiration; the succeeding chill; and finally the reaction declared by the exanthema and subsequent dermatitis. That the eruption is allied with ekzema seems proved by the presence of an existing ekzema; but it differed from ordinary ekzema in the total absence of ichorous exudation, although the skin was obviously condensed by infiltration, and especially in the absence of itching. Neither in ekzema do we ever find the rapid growth and exfoliation of epidermis which is so strikingly characteristic of this form of disease.

At a subsequent visit to our patient nine weeks from the commencement of the attack, I was informed that he had remained at his work for five weeks previously to taking to bed, and that this latter event was brought about by a painful boil situated near the anus. With the pain and irksomeness of the boil, the dermatitis had increased in uneasiness, and he has now kept his bed for a month, although the boil healed in a week. He had been subject to boils as a boy of fifteen, and had outgrown the tendency; but at the present time he has several small boils on the occiput, induced probably by the heat of the pillow. Since my last visit his state had improved very materially; a few days before he had attempted to get up, but he found his skin still stiff and sore, with a tendency to crack, especially in the joints, and the sense of chill previously spoken of was very disagreeable. His pulse is now 80; his tongue clean, but soft and over moist; the appetite good; bowels regular with the aid of a Seidlitz draught; and urine

natural. The scales have disappeared from his scalp, they have lost their linear arrangement on the face, and they are thinner and less abundant on the rest of the body. The armour-plate distribution of the stripe-like laminæ is, however, more striking; the patient speaks of his skin as being "ribbed" by the white streaks of exfoliating epidermis, and these laminæ are transverse upon the arms, and longitudinal on the outer side of the thighs. In the latter situation, the scales, or rather frills, are many inches in length, about half an inch in breadth, and situated pretty evenly at about an inch apart; while on the palms and soles the epidermis is desquamating in broad laminæ. The derma is paler, and thrown into small wrinkles, and is evidently less infiltrated, indurated, and hot; still there is no exudation of moisture on any part of the body, and no perspiration.

With these characters of this very singular and interesting disease before us, we are in a position to inquire, what name would be most suitable to convey the idea of its nature? That it is a dermatitis is self-evident, but so also is ekzema. Dr. Wilks, in describing a similar case, calls it a "general inflammation of the skin or dermatitis." I myself called it, in the first instance that came under my notice, dermatitis squamosa rubra; but the word dermatitis itself expresses redness, and "squamosa" hardly suffices to give an idea of the foliaceous and frilled character of the desquamation—in fact, of a fragmentary exfoliation rather than a desquamation. Hence my selection, as the heading of the present case, of the term dermatitis exfoliativa. Its decided alliance with ekzema, if not its positive identity with ekzema, suggested another name which occurred once to me as being particularly appropriate—namely, ekzema foliaceum, and the further designation of psoriasis squamosa rubra; while it would seem to be this malady which has received from

Devergie and Hebra the name of pityriasis rubra. An objection to the term pityriasis is palpable—namely, the large size of the laminæ of epidermis, which bear no proportion whatsoever to the small bran-like scales of psoriasis and pityriasis. Indeed, in the presence of the patient the latter term is wholly inapplicable, and, if it were recognized, pityriasis foliacea or pityriasis foliacea rubra would be much more suggestive than pityriasis rubra simply. The exfoliating laminæ have generally an elongated figure corresponding with the grooves of motion of the skin, and they are free only by the border, which, in accordance with the motions of the part, is one while directed upwards and another while downwards; and these elongated laminæ, sometimes many inches in length, are apt to be broken into smaller fragments, which, when collected, have the appearance of the bracts of the hop rather than the smaller scales of bran.*

By actual measurement many of the exfoliated laminæ extended to 2 in. in length by $\frac{1}{2}$ in. and $\frac{3}{4}$ in. in breadth, while, in quantity, the scales amounted in weight to somewhat more than two ounces, and in bulk to upwards of a pint in the day.

In the case reported by Dr. Wilks in the "Guy's Hospital Reports for 1861," the patient was a coal-porter, aged 34, under the care of Dr. Rees. On his admission into the hospital he was exceedingly ill, with febrile symptoms, pulse full, tongue thickly furred, and skin covered with a punctated rash, which was thought to be incipient small-pox. In a few days the whole skin manifested a general and intense inflammation; it was vividly red, and "slightly swollen." On the sixth day the skin was beginning to roughen with desquamation, and on the tenth

* Specimens of these hop-like laminæ may be seen in the "dermatological collection" of the College of Surgeons, and also those obtained in the present case.

day large flakes of epidermis were peeling off. On the palms and soles there was no redness at first, but in the desquamating stage the ends of the fingers were raised in bladders, from which the fluid became absorbed, and the cuticle subsided and shrunk, while at a later period he lost the nails of his fingers and toes. As the desquamation proceeded, the tongue was less coated, but became superficially ulcerated, and it was ascertained that he had had a suppurating bubo ten years before. The patient was convalescent at the end of a month; but, although convalescent, he was still an out-patient at the end of the ninth week, and at that time he was losing the nails of his fingers and toes.

According to Devergie, *pityriasis rubra* is the only affection, with one exception—namely, acute lepra—that is capable of invading at once the whole surface of the body. It has been met with more frequently in females than in males, and chiefly between the age of 40 and 45. It makes its appearance on any part of the body, most commonly the front of the trunk or the inner side of the limbs. It presents itself as in erythema, vividly red, deep and uniform in tint, and terminating by an abrupt boundary. It increases rapidly in extent and depth of colour, the skin becomes thickened and moist, and throws off thin epidermic scales that are easily detached. The redness and moisture are augmented with the progress of the disease, and the epidermic lamellæ become larger and more abundant, the symptoms which accompany the disease being heat, tingling, and some degree of itching.

If the eruption be severe, a surface of skin of considerable extent may be invaded in the course of a few days, and not uncommonly the whole body may become affected in from two to four weeks. When this is the case, the subcutaneous tissue as well as the skin is slightly swollen, and the sweat-like exudation is so excessive that the patient may require

a change of linen twice or three times in the night. As the cutaneous transpiration subsides, the amount of epidermic exfoliation increases to such an extent that in the morning there may be collected from the bed a quantity of scales sufficient to fill a measure from two to three quarts (*deux et même trois litres*).

Contrasting pityriasis rubra with ekzema, Devergie remarks that although, from the presence of inflammation of the skin accompanied with exudation, heat, and itching, ekzema might be suspected, yet that there really exist strongly marked differences between the two: for example, in ekzema the redness is less vivid, and blends with the surrounding skin; the pruritus is severe, the eruption never occupies the totality of the skin; there is no thickening of the skin, and the scales only make their appearance at the chronic period of the disease, they adhere very firmly, and can only be removed with pain. Whereas, in pityriasis rubra the redness is intense and abruptly circumscribed; the skin thickened, the subcutaneous cellular tissue somewhat swollen. There is very little itching, but severe burning sensation; the exudation has the character of sweat, scales appear from the first, abundant and easily detached, and there are red secreting puncta, the redness being perfectly uniform.

Pityriasis rubra resembles ekzema in the firmness of hold which it takes upon the system, and is often more difficult to cure. When it has invaded the whole of the skin, it is perpetuated for several months, and continues during the entire period to produce epidermic lamellæ. This wasteful operation results in debility; the patient becomes emaciated, his mental and digestive powers both suffer, and not unfrequently diarrhoea is developed. Even when the inflammation has the appearance of subsiding, it is liable to relapse, and the disease rarely runs its course without evincing a relapse.

Devergie indicates two periods of the eruption—acute and subsiding. During the former the skin is burning hot, so that the patient can scarcely bear any covering, even in winter; while in the subsiding period the heat and exudation are diminished, but the lamellated exfoliation continues. The prognosis of the disease, he tells us, is not grave, unless it occur in the debilitated or the aged; but it is always serious on account of its persistent character and the tendency which it occasionally exhibits to merge into pemphigus. Moreover, when neglected, it is apt to become chronic, and to last for several years.

The treatment most suitable to the acute period of the disease consists of daily baths, inunction with lard several times a day, starch powder, cooling drinks, sometimes the vapour bath, and, where the condition of the patient is favourable, arsenic; while in the subsiding stage the best remedies are—applications of tar, baths of alum or perchloride of mercury, and gentle frictions with juniper tar every three or four days.

The pityriasis rubra of Hebra corresponds sufficiently closely with that of Devergie to make the identity of the disease evident; but he states that the affection is extremely rare, that he had seen but three cases, and that these three cases all terminated fatally after a duration of a certain number of years. Indeed, the fatal issue of the complaint, and its resistance of remedies found useful in ekzema, he regards as the main causes for a distinction between pityriasis rubra universalis and ekzema squamosum. The stage of ekzema squamosum which corresponds with pityriasis is the stage of decline of the disease, and is that consequently which the most readily yields to treatment. "I give the name of pityriasis rubra," he observes, "to an affection in which, throughout its whole course, the only symptom is the persistent deep-red coloration of the skin. In this disease there is no considerable infiltration of

the cutis; no papules or vesicles are formed; no secretion is poured from the surface; the itching is slight, and does not lead to the formation of excoriations; no fissures make their appearance; and, lastly, particular regions of the body are rarely affected, the whole surface of the skin being generally attacked."

The patients seen by Hebra represented to him that the eruption had made its appearance on the whole body at once; at first the redness was slight but it increased quickly in depth of colour. The health was undisturbed, they could pursue the daily avocations, and they were reminded of the disease, not by any unpleasant sensation, but simply by the redness of the skin; little by little they lost appetite, then their strength gave way; they became emaciated, and finally succumbed to exhaustion. Hebra pays no especial attention to that remarkable feature of the disease, the thin exfoliating lamellæ which are real lamellæ and not scales, but concludes by recommending, with a view to therapeutic treatment, prolonged tepid bathing and inunction with oils and emollient ointments. This, he says, tends to render the skin more supple; but "neither arsenic tincture of cantharides, sulphur, antimony, decoction of lignorum, sarsaparilla, iodine, nor mercury, has succeeded in putting a stop to the disease."

Comparing the descriptions of the disease given by Devergie and by Hebra, the chief point of difference between them relates to the prognosis of the affection. The former states that it is not grave while the latter, certainly with the limited experience afforded by three patients only, found it always fatal. Devergie speaks of its commencement on a limited portion of the skin, and spreading thence, in the course of a few days, to the whole body; while the patients examined by Hebra declare that it appeared on the whole body at once, and such was the case in the example recorded by Dr. Wilks and

that by myself. Another discrepancy is more apparent than real. Devergie remarks upon the infiltration of the derma, and its exudation of a sweat-like secretion; and he also finds some degree of swelling resulting from subcutaneous infiltration. In my own experience the infiltration of the derma is well defined, but there was no visible transudation from the surface, and to the hand the skin gave the sensation of dryness. And Hebra, in his definition of the disease, while stating that there is "no considerable infiltration," in other parts of his description observes, "There is no infiltration of the cutis"; and again, "no swelling or serous infiltration exists." I think, therefore, that we shall only be doing justice to Hebra to regard these latter expressions as relative, and not positive. For most certainly there does exist a decided infiltration and condensation of the derma.

In reference to the treatment adopted in the present case, it consisted in the administration internally of sulphate of magnesia and quinine, one drachm and one grain, in infusion of roses, with a few minims of dilute sulphuric acid, twice in the day; and in inunction into the skin of the benzoated oxide of zinc ointment in combination with carbolic acid, ten minims to the ounce; and the Carron oil also with the addition of carbolic acid. As I have stated above, it was found necessary to give the patient a Seidlitz draught occasionally to secure a free action of the bowels; and at the end of a fortnight the medicine was changed to the citrate of iron and quinine. At the present time there is every reason for expecting that the case will end favourably without further treatment; but should the dermatitis assume a chronic form, it may be necessary to have recourse to arsenic.

On the 6th of January, 1870, three months from the commencement of the attack, the patient reported that he had returned to his duties about

three weeks previously ; that he had nearly regained his usual strength ; and that he had lost the unpleasant feeling of chilliness already mentioned. On examining his skin, I found that the exfoliation from the general surface of the body had ceased, but that a remnant of desquamation existed on the scalp and around the apertures of the face, the eyes, nose, and mouth ; and that in these situations there was also an abnormal amount of redness. The scales on the scalp were circular in figure and loose at the circumference, the loose border being white in appearance. The skin of the palm of the hands had exfoliated completely, and the nails of all the fingers were detached at their roots, whitish in colour, and in progress of separation.

EKZEMA TUBEROSUM.

If we were called upon to mention the most constant symptom of ekzema, we should name *infiltration*, before redness, or desquamation, or exudation. We have seen ekzema without redness, but ekzema would cease to be ekzema without infiltration. As is manifest in many diseases, a given symptom may present every possible degree of development ; it may be a mere shadow, or it may be a confirmed and grave reality. This observation is strikingly applicable to many diseases of the skin, and not least among them, to ekzema. Infiltration may be present without thickening, giving rise to a leathery state of the integument that is apt to break into fissures and give origin to ekzema fissum ; or it may swell up the tissues so as to produce prominences having three-quarters of an inch and even an entire inch, in elevation. When, as frequently happens, the portion of the skin so infiltrated is of small extent, we may then have tumours of considerable prominence, and with a base scarcely at all exceeding their height. This peculiarity of manifestation of

the disease is rare, but nevertheless we have seen it several times, but never to so great a degree as in a case which we shall presently describe. It will be seen, that in using the word *tuberosum*, we have no intention of indicating so much even as a variety of the parent disease, but simply to mark a symptom with which ekzema is sometimes liable to be complicated.

A lady was delicate in her youth; she then led a life of gaiety and fashion, with its consequent excitement; she married at thirty, had several miscarriages, and much exhaustion from sickness in her family; she is now fifty-five. Soon after the birth of her last child, fifteen years ago, she was seized with intense hemicrania. All kinds of remedies were resorted to for the cure of this painful affliction, but in vain, and she was fairly worn out and prostrated by its obstinate continuance. The attacks recurred frequently; they were attended with severe retchings, violent pulsation in the head, and lasted for several days. Among other forms of treatment that were adopted was mercurialization to the extent of salivation.

As a last resource she was advised, four years ago, to wear a galvanic belt; the belt excited ekzema, and the ekzema gradually spread over the entire skin. For a time the ekzema only added to her sufferings, but within the last twelve months has proved derivative; nature is content with the substitution, and she no longer suffers from headaches.

The ekzema, which has now occupied the skin for four years has remained stationary; it has been treated without plan, without principle; has been sometimes benefited, sometimes aggravated by the means employed, but has defied all alike. We found her on a couch, unable to bear her dress; her face reddened, eyebrows dry and corrugated, scalp scurfy, neck red, wrinkled, and tuberculated; and her hands dry, parched, rough, and scaly; the

skin was fissured in the lines of motion, and the nails were discoloured and scabrous. The covered parts of the body presented similar characters, the skin being wrinkled and impoverished, red, squamous, infiltrated, and in some parts œdematous. Scattered numerously over the surface were the infiltrated tubera already mentioned, some single, others in groups, and a few excoriated and moist with exudation. In the earlier periods of the disease she had suffered greatly from pruritus; she had taken arsenic to excess, and without benefit; and six months ago had placed herself under the management of a doctor of the feminine gender. The good woman had scrubbed her severely with tar; this relieved the pruritus, but being carried too far, had set up the renewed irritation, which resulted in the tubercular infiltrations, so remarkable in this case. At various times, and especially since the conclusion of the tar treatment, there has been very copious exudation from the inflamed surface, constituting ekzema ichorosum.

We found her tongue as red as her skin, and glazed; she had constant thirst, but her appetite was good, and she could eat meat and drink beer with enjoyment; she had a little bronchitis; her pulse was firm, bowels somewhat confined, and nights sleepless. We prescribed for her an effervescent saline with ammonia, and directed that the whole surface of her body should be carefully anointed with the benzoated zinc ointment, and afterwards dusted over with oxide of zinc, diluted with starch-powder and camphorated. We ordered a repetition of this process night and morning; oftener if agreeable, and abstinence from ablution of every kind; the surface was to be gently wiped with a soft napkin previously to the repetition of each inunction. Her diet was to be that of health, irrespective of her invalid condition. We expect, by thus allaying the congestion of the mucous membrane and skin, and

conservating her vital powers, to allay the irritability of her nervous system, and lead her by degrees to a more nutritive and tonic method of treatment.

EKZEMA SPARGOSIFORME.

Gentle reader, tremble not at a new term, for what is that term? Why, truly, nothing more than an expression in scholarly and familiar words for an ekzema which, by infiltration and hypertrophy of the derma and subcutaneous tissues, has become developed into a bulk and appearance suggestive of spargosis cruralis, the bouknemia tropica, the Barbadoes leg, the elephant leg of the Arabians. Such a condition of the lower extremities must have been seen often, but never more characteristically than in a patient whom we have just visited in consultation with Mr. Spencer, of Stoke Newington. Our patient is a man of 62, a retired butcher. He had been for a long time a sufferer in health; his heart was large and flabby; the kidneys were diseased, as was shown by the occasional presence of a considerable quantity of albumen in the urine; his liver was large and inactive; he suffered under asthma, and not long since had an attack of apoplexy. Mr. Spencer had treated him for some years wisely and judiciously, and he looked well in the face, and had a good appetite and fair digestion. Some part of the immunity from the destructive consequences of his disease was possibly due to the invasion of his legs by a large share of the *causa morbi* present in his system. From the instep to the middle of the calf, and surrounding both limbs, was an ekzema of a deep red colour, which exuded many ounces of serum in the course of the day. The ekzematous portion of the limb was swollen and tense from serous infiltration and hypertrophy; on the instep it formed several prominent folds, and the surface

was granulated, or, as Mr. Spencer observed, nlated by the hypertrophy of the papillæ cutis. foot also was enlarged from œdema, but free ekzema, and the general aspect of the limbs, spective of the ekzema and excessive exudation, exactly that of the subjective character which have selected, namely, spargosis or bouknemia. was as much spargosis from cellular inflamma infiltration, and hypertrophy as spargosis itself that was wanting in the latter being ekzema. (I definition of spargosis we may refer our reader vol. i. of the *Cutaneous Journal*, page 110; and the association of hypertrophic papillæ cutis spargosis, to page 118 of the same volume.)

SCABIES PHLYKTÆNODES.

6628. A gentleman from Lincolnshire, aged 28 had scabies for five months; it began in the ha and has been under treatment for three mo As the true nature of the disorder had been c looked, the eruption has spread to almost every of the body. It is especially confluent and se on the thighs, where it has been much aggravated by scratching, and in this region are four l bullæ resembling those of pemphigus, and nume large vesicles or phlyktænæ. Fresh bullæ phlyktænæ appear each day, while the older collapse and desiccate into thin scabs. Some of phlyktænæ are umbilicated, and several of the b have two or three umbilical indentations. In days under appropriate treatment this gentle returned home cured.

6529. A gentleman, aged 38, and his daughter aged 11, are both suffering from scabies; daughter for three months, the father for months. The eruption in the father presents peculiarity of being accompanied with large b

resembling those of pemphigus. These are developed chiefly on the thighs. At the end of a month of the mildest possible treatment, unguentum staphisagriæ diluted with three parts of unguentum zinci, ekzema appeared on the extremities, upper and lower, of the father; and ekzema vesiculosum on the hands of the child. From these facts we deduce the conclusion that father and daughter possess the ekzematous diathesis, which has been excited into activity by the scabies and its treatment.

LEICHEN PRURIGINOSUS AFTER SCABIES.

6205. A lad, aged 9, had been teased for four years with pruriginous pimples, leichen pruriginosus; the pimples were discrete and dispersed over the body, and were scarcely apparent until they had been scratched; they had, as is very commonly the case, succeeded scabies, and appeared to be un-eradicable. The boy's mother, also, suffered from the same, and had become the victim of an itch-momania, a not unfrequent delusion. We prescribed, for both, three-minim doses of liquor arsenicalis, spongings with a tar lotion, and ablutions with the juniper tar soap. The arsenic disagreed with the boy, and was suspended at the end of ten days, but the local treatment was continued, and he was quite well at the end of three weeks. The mother's progress was more tardy, and we had occasion to change the ferro-arsenical drops for a mixture of phosphoric acid, liquor strychniæ, and tincture of orange-peel; but she also recovered in a few weeks.

EKZEMA ICHOROSUM ET SQUAMOSUM.

In a paper read before the Medico-chirurgical

Society in 1810, and entitled, "An Account of a severe Case of Erythema, unconnected with mercurial action," Dr. Marcet, its author, calls attention to the papers on Erythema mercuriale and Hydragryria, from the pens of Dr. Spens and Dr. Alcock, and adduces the present case in proof of the possibility of occurrence of a similar form of disease without the interposition of mercury as a cause. "The most characteristic symptoms of this disease," he says, "a sudden desquamation of the cuticle over the surface of the body, with an ichorous discharge and a general redness and tumefaction"; we must admit that he could hardly have drawn a clearer definition of ekzema.

His case is as follows:—A gentleman, aged 35, of spare habit and pale complexion, had been subject to eruptions of the skin since the age of sixteen, and similar attacks are liable to recur, without regularity, from time to time. The attack is preceded by an uneasy sensation at the pit of the stomach, without nausea, fever, or loss of appetite. It then begins to feel stiffness and heat in various parts of the body; the parts become red and swollen rapidly; the hands, the feet, the ears, and the face are the regions principally affected; but the disease also appears frequently in the face, the eyes, and the scalp; and in its severest degree pervades the whole body. On the second or third day the cuticle is raised in innumerable small vesicles; and when the swelling abates on the third or fourth day, the dermis begins to crack and exfoliate, exposing an inflamed and partially abraded surface, from which a fluid possessing a strong disagreeable smell exudes. On the extremities and in the bend of the toes, the finger-joints, pretty deep fissures and excoriations (ulcerations) are formed, which heal readily, and in a day or two the cuticle falls off in large patches, sometimes as large as the hand; sometimes the nails are also cast off. In the course of a fortnight

three weeks the complaint is entirely removed, but occasionally, at the moment of convalescence, the new cuticle becomes hard and dry, and cracks again as in the first instance, producing a repetition of the old symptoms.

Although there was no distinct pyrexia attending these symptoms, there appeared to be a great degree of irritability and a peculiar degree of susceptibility or morbid sympathy of his stomach and nervous system. Sometimes the eruption was confined to one hand or one finger; and on another occasion the desquamation of the cuticle all over the body was such that on raising the bedclothes the spot where he lay was found literally strewed with scales. This last attack was immediately preceded by and connected with a severe wetting in a shower of rain. "In giving a name to a disease," says Dr. Marcet, who looks upon the case as one of great rarity as well as obscurity, "there never can be any objection to our availing ourselves of some of its most constant symptoms. Thus, as the ichorous discharge is a constant prominent feature of this affection, I should think the term *erythema ichorosum* well adapted to distinguish it."

Dr. Marcet invited Willan to see this case during a slight attack, who suggested that it must be referrible to the genus *impetigo*, and it appeared to him to answer nearly to the *impetigo rubra* of Celsus; "but the disease presents itself in many different forms, none of which, amongst those that he has met with, have equalled in extent and severity that which has just been described."

The *impetigo rubra* of Celsus we regard as an ekzema, and his account of the affection is as follows:—

Another kind is more severe, almost like a papula, but more rough and red, and presenting a variety of figure. It throws off superficial scales; there is more erosion; it spreads more quickly and exten-

sively; and is more regular in its periods both recurrence and cure than the preceding species.

Dr. Marcet found the most successful treatment to be mild aperients, the warm bath, and poultice with liquor plumbi to the hands and feet; and further remarks on the perfect similarity of Rutter's case, published in the fifth volume of *Edinburgh Medical Journal*, to his own.

In reflecting on this case, which is one of everyday occurrence amongst ourselves at the present time we cannot but be struck by the presumed rarity of the disease. Willan himself seemed to be undecided as to its diagnosis, while the shrewdness of Dr. Marcet in naming it erythema ichorosum brought him instantly to the truth; the man of classes, and orders, and genera was foiled by the man of simple observation. Ekzema must have been many times rarer in the days than it is in ours.

VII.

HISTOLOGY OF EKZEMA.

THE researches of German pathologists, and especially those of Wertheim, Auspitz, Biesiadecki, and Neumann, have recently thrown much light on the histological pathology of disease of the skin. They have shown that the tumefaction of exudative affections is not alone due to infiltration of the tissues with fluid, but that a hypertrophic and hyperplastic process is also present, and in great activity. Existing cells of the tissues become enlarged or distended; their nuclei are increased in size; and there prevails an abundant formation and rapid proliferation of new cells. This energetic hyperplastic operation taking place in the substance of the tissues, and especially around the circumference of the minute arteries and capillary vessels

tends to enlarge certain of the structures, such as the pars papillaris and the rete mucosum, and to disintegrate the stroma of the corium itself, introducing into its areolæ and spaces a new substance, forcing asunder the existing tissues, and thus materially and solidly increasing the bulk of the skin. Additional interest is given to these observations by the discovery made by Biesiadecki of the presence in the rete mucosum of the normal skin of cells of connective tissue sometimes fusiform and sometimes stellate, and of the proliferation of these cells in the exudative affections, and the extension of their ramifications between the cells of the rete mucosum, including the latter in a retiform web. These connective tissue cells are continuous with the connective tissue of the pars papillaris and papillæ, and a direct continuity is thereby established between the corium and the rete mucosum, which exercises an influence over its morbid phenomena.*

In illustration of these views we subjoin a paragraph from the JOURNAL OF CUTANEOUS MEDICINE,† for which we are indebted to Dr. Tilbury Fox:—

“Biesiadecki has recently investigated the special pathology of certain inflammatory affections of the skin, especially in regard to the cell-changes that take place in them. This observer starts with the proposition that the demarcation between the epidermis and the corium is not so distinctly defined as is generally taught. In newly-born children, and even to some extent in adults, the two structures are continuous the one with the other. In infants

* In Max Schultze's "Archives of Physiology," Dr. Podcopaew says that nervous filaments have been traced in and through the rete mucosum, and have been found to constitute a plexus between that layer and the horny epidermis. His observations have been made on the skin of the rabbit, and with the aid of a solution of the chloride of gold. The discovery is sufficiently remarkable to need corroboration.

† Vol. iii. p. 326.

the uppermost layer of the corium is composed of a homogeneous blastema and granules; the rete mucosum is made up of these same granules that have developed and invested themselves with a layer of protoplasm, and as they gradually come nearer to the surface, they flatten out, and become more distinctly horny, the nuclei meanwhile shrinking, and causing the formation of vacuolæ around them. In addition, there are certain elongated cells in the rete mucosum which are supposed to be derived from the cells of the connective tissue. They are described as small fusiform cells, sometimes branched, containing one or several nuclei, more or less flattened out and elongated (staff-shaped). Now it is believed by Biesiadecki that these particular cells play an important part in the development of skin diseases. In ekzema the papillary layer of the skin is specially involved; the first stage is transmission from the vessels of the papillæ of a clear serous fluid, by which the papillæ themselves are enlarged and, so to speak, distended. The peculiar cells spoken of a moment since rapidly enlarge in size and increase in numbers, whilst they are pushed onward towards the free surface amongst the cells of the rete mucosum. As they advance or migrate from the papillæ, these same cells branch, and form a network of fibres in the interstices of which lie the ordinary cells of the rete mucosum. Biesiadecki is of opinion that the branches unite together in such a way as to form 'nutrient canals,' and a channel by which the transmitted serum is conveyed to the surface. When pus is formed, Biesiadecki is of opinion that the connective tissue corpuscles increase at a specially rapid rate, so as to form a sort of layer oftentimes in the rete mucosum, and themselves give rise to corpuscles, the cells of the rete mucosum being flattened out and compressed into a semi-network of fibres."

VIII.

THERAPEUTICS OF EKZEMA.

IF any one were to inquire who was the inventor of medicine, the answer must be, Nature! Certainly not man. Or, if we inquire whence our remedies are derived, the answer would be, from the three divisions or kingdoms of nature,—the animal kingdom, the vegetable kingdom, and the tellurian kingdom. We hear ignorant people not unfrequently protesting against mineral medicines. But they are unprepared for the answer, that minerals as well as vegetables and animals are fashioned by the hand of the Almighty for the natural food of man. Iron, as we know full well, abounds in our drinking-water; and we have only to point to the village of Whitbeck, in Cumberland, for an example of arsenic destined to be the food of man. The river stream that flows through Whitbeck contains a considerable quantity of arsenic; so much, in fact, that neither ducks nor trout can live in its waters, and yet this is the sole drink employed by the inhabitants from the day of their birth to their last hour. And, then, we often find these very protesters taking under their patronage the vegetable remedies, the rapid jalap, or the gentle colocynth, the squirting elaterium, or, perchance, the lethal aconite, the blinding belladonna, or the cramping nux vomica. No wonder that the uninitiated should seek to inquire in what manner these, and such as these, become the remedial agents of man. We know that our older Pharmacopœias contain some strange and startling remedies. Take one example, album græcum, the stercus canis; and yet there is wisdom in the use of

this substance, although its first mention excites only disgust. The medicine of the album græcum, album canis is phosphate of lime in a state of insensible subdivision, a remedy, under appropriate circumstances, of the highest possible therapeutic value. But animals are physicians as well as man, and the dog is not slow in retaliating upon his master. The dog is sometimes costive, sometimes bilious, and, upon homœopathic principles, he discovers a remedy in the waste bile of man, which he swallows greedily when his needs demand. Now we ourselves have found in fel bovinum an elegant as well as an excellent remedy; but no better, setting prejudice aside, than that which the dog finds nearer home in the stercus domini. But we took up our pen not to repeat that which is known to those who have studied medicine, but to narrate an illustration which has just been mentioned to us as a common practice in Mexico. Major C., our informant, accompanied Fremont's American expedition to Mexico in 1847, and while in the plains at the foot of the Rocky Mountains, to the east of New Mexico, and on the homeward march, one of the horses was suddenly seized with intense colic, which bent the poor animal almost double. The Mexican owner immediately threw the animal on its back, while one of the party, at the shortest notice, produced a cylinder some eight or ten inches long of the well-elaborated material so fascinating to the dog when suffering under intestinal difficulty. The stercus hominis was glibly thrust down the horse's gullet, and he was allowed to rest. In a very short space of time all his spasm ceased, the animal had a copious relief from its bowels, and it was well able to pursue its journey. Who first, it may be said, suggested this valuable remedy to the muleteer? Possibly, the dog; we doubt very much if he derived it from the tables of the Asklepiadæ, or from the books of the learned. Sometimes, no doubt, nece

sity may be the mother of invention. We can understand that to the victim in the agonies of the intense pruritus of a chronic ekzema, the chamber utensil may be made to supply the place of an experimental bath, and, in fact, may prove salutary where other means have failed. We know a learned professor of medicine, who, suffering habitually from intertrigo in the grooves of his prepuce, finds suffusion with urine his best remedy; and we have known of instances in which chronic ekzema in the dog was treated successfully by similar means. But we were scarcely prepared for the statement of a patient who applied to us the other day for the treatment of chronic ekzema, and who informed us that for many months she had drunk every morning a wineglassful of her own urine; but, alas! without any beneficial result. The theme is suggestive and interesting, but practically, unless in the instance of the horse and the dog, of little real value.

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